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Morphophonemic Variability, Productivity, and Change: The Case of Rusyn

by

Marta Harasowska ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of requirements for the degree of Doctor of Philosophy

in

Slavic Linguistics

Department of Slavic and East European Studies

Edmonton, Alberta

Spring 1995

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled *Morphophonemic Variability, Productivity, and Change: The Case of Rusyn* submitted by Marta Harasowska in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Slavic Linguistics.

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ABSTRACT

The goal of this study was to investigate processes associated with morphophonemic variability, productivity, and change. We adhered to the Labovian axiom that language is an object possessing "orderly heterogeneity" conditioned both by linguistic and social factors. Thus, the study of language must be carried out against the background of the speech community in which it functions. Bybee's analogy-based model of morphology was adopted to represent the linguistic processes under investigation, in the conviction that an analogy-based approach to language may be much more "psychologically real" than one that is rule-based.

The language we chose as the focus of our study is Rusyn, a minority language in Serbia's autonomous province of Vojvodina. Sharing historical roots with Polish, Slovak, and Ukrainian, present-day Rusyn functions within a language contact area dominated by Serbo-Croatian. Two morphophonemic alternation patterns in Rusyn were examined - the "velar palatalization" pattern and the "dental palatalization" pattern - both of which share diachronic and synchronic similarities with the above-mentioned Slavic languages.

The data for the study were collected in the course of field work in Vojvodina from a sample of informants chosen in accordance with the Labovian model. During the analysis of the data, however, Labov's "social grouping" approach proved to be unsuitable to the Rusyn situation. Instead, the data were interpreted using "Response Coincidence Analysis," an analytical technique based on "linguistic groupings," i.e. groupings based on the linguistic patterns of speakers without reference to the social variables present in the data.

The results of our analysis suggest that morphophonemic variability stems from different, but mutually intelligible, norms speakers construct when forming semantic and phonological connections between items in the lexicon. At least two factors are important

in influencing the process of forming these connections - phonetic distance and familiarity - both of which themselves are affected by the frequency of particular lexical items.

The factor of frequency is also seen as important in determining the productivity of morphophonemic patterns. Previously, only type frequency was considered to play a role in this process. However, our results reveal that when semantic connections are paramount, token frequency assumes a large part of the task of securing pattern productivity. Differences between phonological and semantic connections, and the resulting implications for a model of language are indicated.

Thus, morphophonemics emerges not only as a transitional level between phonology and morphology, but indeed as a bridge between phonology, morphology, and semantics. Bybee's analogy-based model of morphology is well-suited to represent this broadened function of morphophonemics. Moreover, the parameters proposed by Bybee for the organization of items within paradigms appear equally valid for lexical groupings across paradigms, which formed the basis of our study.

And, finally, our results suggest that the examined morphophonemic alternation patterns in Rusyn are in the process of change, attributable to both linguistic and extra-linguistic factors. Hence, the Labovian approach to the study of language is vindicated. Although the unique situation of Rusyn requires several modifications in this approach, Labov's general conclusions about the mechanisms of linguistic change, particularly his observations on the actuation of change, are substantiated by our study. This, in turn, suggests that the mechanisms of linguistic change may be similar both in situations of dialects in contact, as described by Labov, and in situations of languages in contact, as described for Rusyn.

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CHAPTER ONE
INTRODUCTION

On the vast, fertile plain of Vojvodina, the autonomous province of Yugoslavia's Serbia,[1] lives a small Slavic minority, the Rusyns, whose history and, particularly, language have captivated and perplexed many a scholar, and who, despite the controversies with regard to their ethnic and linguistic origin resounding in the scholarly sanctuaries, have developed a dynamic and distinct social structure within the larger society in which they live. This small, but active Slavic group will form the focus of our study, intended not to resolve the above-mentioned controversies, but rather to examine the internal forces operative in the speech of its speakers, with the hope that this, in turn, will enhance the understanding of the causes leading to variation in the speech community and ultimately to language change. We will direct our attention to the area of morphophonemics, examining at close range two types of morphophonemic alternations in Rusyn.

Before proceeding to questions of a theoretical nature, let us, first of all, introduce the people, whose language we have chosen as the basis of our study.

The Rusyn people - their present and past

The Yugoslav Rusyns have been variously referred to in the scholarly literature, e.g. as "Ruthenians," or "Bačka Ruthenians" (Bidwell 1966), "Rusinians" (Marvan 1985), "Rusins" (Birnbaum 1983), "Bačka-Srem Ukrainians" (Horbatsch 1962). In Serbo-Croatian (SC) they are referred to as "Rusini," sg. "Rusin." In their own language they refer to themselves as "Rusnaci" (the self-designation "Rusini" is rarely used, although see Laboš 1979), which in the masc. sg. is "Rusnak," and in the fem. sg. "Ruskin'a," Their language they call "ruski jazik," or "ruska bešeda." In our study, we will adopt the designation "Rusyn" to refer both to the people and to their language, following Magocsi

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[1] References to Yugoslavia and to Serbo-Croatian reflect usage of these terms prior to 1991.

(1977), with the understanding that we mean specifically the Yugoslav Rusyns. This terminological choice is consonant with our conviction as to the importance of the historic and linguistic ties that exist between our study group and the numerous ethnic groups, primarily of the East Slovak-Carpatho-Ukrainian area, who also refer to themselves as "Rusyny," a point of view ardently propagated by Magocsi. (This choice in terms, however, should not be seen as supporting any other viewpoints of this historian.)

The official statistics (Radovanović 1988 provides the 1981 census figures) cite the number of Rusyns in Yugoslavia as 23,000. But the unofficial figures quoted in various texts are higher, ranging from 30,000 (Horbatsch, op.cit.) to 35,000 (Bidwell, op. cit.). (This discrepancy is discussed in Spieß 1986. All additional figures are taken from this author.) The largest number of Rusyns (more than 19,000) live in Serbia's Autonomous Province of Vojvodina, and here, in turn, most compactly in the regions of Bačka and Srem. Another approximately 3,300 live in Croatia (primarily Slavonia).

Present-day Rusyns can boast of two cultural centers. The first is the village Ruski Kerestur (in SC Ruski Krstur), located some 50 kilometers northwest of Novi Sad. This village has historically served as the Rusyn cultural center, and today is still the only "truly" Rusyn village. Of its 6,099 inhabitants, 5,694 (93%) are Rusyns. Moreover, here we find an elementary school, high school and vocational school with Rusyn as the language of instruction. The second cultural center of the Rusyns is the administrative center of Vojvodina, the city of Novi Sad, situated on the picturesque banks of the Danube. Novi Sad has taken on the role of cultural center for the Rusyns in more recent years, when many of the activities formerly performed in Ruski Kerestur were transferred to this city. Today in Novi Sad we find numerous Rusyn social, cultural and religious organizations. Here the Rusyns have their own publishing house, "Ruske Slovo," which brings out not only a Rusyn-language weekly by the same name, but a wide range of Rusyn periodical literature (satisfying a full scope of interests: from children's magazines to scholarly journals), as well as non-periodical literature (literary works, school textbooks, dictionaries, etc.). From Novi Sad emanate regular radio and television broadcasts in the Rusyn language. In 1983 a Chair for Rusyn Language and Literature was inaugurated at the University of Novi Sad, having as its predecessor a Rusyn Lectureship which was created at that university in 1972. Thus, while well-integrated into the Serbo-Croatian macro-community, the Rusyns have formed a dynamic micro-community capabable of satisfying the socio-cultural needs of its members. (Duličenko 1981, and Spieß, op.cit. provide a fuller overview of the rich socio-cultural organization of the Rusyn community.)

The Rusyns are relative newcomers to the Bačka-Srem region, having settled here some 250 years ago. Their feelings toward the past and present are poured out in a song:[2]

> "...na rovn'i žyjeme / al'e zme z tyx horox kvece presadzene / hory Karpati, naša ocovščino / vitaj nam vitaj šicka rodzino..." (we live on a plain / but are transplanted flowers from those mountains / Carpathian mountains, our fatherland/ greetings, greetings to our entire family).

They came to the Bačka plain from the Carpathian mountains, which they still refer to as "Horn'ica" and "fatherland." They came as settlers to cultivate lands laid open after the victory of Austria-Hungary over Turkey in the early part of the 18th century. They arrived from various regions of what was then northern Hungary (today East Slovakia), and they did not all arrive at the same time (some apparently did not even reach the Bačka plain but settled instead in the northeastern areas of present-day Hungary). The first group of families arrived in 1744 from the county of Zemplén to settle in Kerestur. The next group, coming from the county of Borsod, settled a neighboring village Kucura in 1765. The migration from the Carpathian region continued thus in waves through the 18th and 19th centuries drawing settlers also from such Hungarian counties as Sáros, and Abaúj. As a result, the Rusyn settlements expanded beyond Kerestur and Kucura to include other neighboring villages and towns in Bačka, then Srem and finally neighboring Slavonia. (Laboš, op.cit., and Švagrovský 1984 include many firsthand accounts dating to the period of settlement; overviews of this period are provided by Duličenko 1972, and Horbatsch, op.cit.)

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[2] The following Rusyn text is given in phonemic transcription (refer to Tables 1.1, 1.2, and 1.3). Slashes (//) are omitted. The translation is mine. We will adhere to this practice throughout this study.

To their new homeland the Rusyns brought two unique traits which no doubt helped them maintain (and ultimately also shape) their identity during the two and a half centuries that have elapsed since the first settlers left "Horn'ica." The first of these was their religion. In contrast to their Serbian neighbors, who are Orthodox, the Rusyns are Greek-Catholics (Catholics of the Byzantine Rite). The second unique trait, distinguishing the Rusyns from their neighbors in the new homeland, was their language. It is to this topic that we turn next.

The Rusyn language - its past and present

The spoken language

The Rusyn language has been called "both a peculiar 'isolated language' and a thoroughly embedded, multi-integrated member of the Slavic linguistic group" (Birnbaum, op.cit.:15). This apparent paradox can only be resolved when the entire complexity of the formation process of present-day Rusyn is taken into account, including the socio-linguistic, or more specifically the socio-geographic aspect of this process. We mentioned earlier the migration of the Rusyns from their Carpathian homeland to present-day Yugoslavia, which occurred in several waves extending over a period of a century. In addition to the time factor, the geographic factor is no less prominent in the migration process for, as we have seen, the settlers that were swept up in the various waves of migration came from different parts of a mountain region, which, as Birnbaum aptly characterized, "was at the heart of a linguistic convergence area." In view of this it is safe to assume that the language the settlers brought with them to their new homeland was not a uniform one, but rather reflected differences resulting from the above-mentioned two factors. Moreover, in the new homeland yet another new force came into play: contact with a completely different language, i.e., Serbo-Croatian. All these factors, therefore, contributed to the shaping in the course of time of a language which is both exceptional ("isolated") and at the same time truly Slavic ("multi-integrated"). Speaking metaphorically, a unique flower rooted in fertile Slavic soil.

This point of view, however, has not always prevailed in the linguistic discussions which touched on the question of the status of the Rusyn language in the Slavic language family. In fact, these discussions were characteristically more categorical in nature, claiming Rusyn as either a dialect of East Slovak or Ukrainian. (Summaries of these discussions can be found in Birnbaum 1983, Duličenko 1972, Gustavsson 1983, Marvan 1985, and others.) It is our opinion that this controversy suffered basically from two weaknesses: on the one hand, a failure to distinguish the question of ethnic from the question of linguistic identity, with the result that the two became equated (cf. Duličenko, op.cit., on this point); and, on the other hand, an excessive reliance on purely genetic evidence, with a primary focus on phonological data, i.e., reflexes of Common Slavic (this point seems to find support in Birnbaum's (op.cit., and 1985) argumentation for the necessity of drawing also on typological evidence in matters of language classification).

Our first criticism pertains chiefly to the initial phases of the polemic concerning the status of the Rusyn language, which emerged in the year 1898, the year which also marked the beginning of serious scholarly interest in Rusyn. That year saw the publication of studies on the Rusyns and their language by the Ukrainian Volodymyr Hnatiuk, the Slovak František Pastrnek and the Russian Aleksej I. Sobolevskij. While the first scholar upheld the view of a Ukrainian origin of the Rusyns, the latter two argued for their Slovak origin. Soon other prominent Slavists joined the debate, among them O. Broch, S. Czambel, and F. Tichý. In defense of these early participants of the Rusyn polemic it must be said that, although they did not clearly separate the questions of ethnic vs. linguistic identity, in their description of the linguistic material these scholars did in fact indicate the mixed/transitional character of Rusyn. Thus the Slovak dialectologist Czambel, for example, although defending the East Slovak origin of Rusyn (Marvan, op. cit.:75), did simultaneously point to the transitional character (Polish-Ukrainian-Slovak) of the East Slovak dialects (Duličenko 1972:41, Horbatsch 1962:269).

Another weakness of the linguistic discussion of Rusyn, i.e., an overreliance on purely phonological qua genetic evidence in arguments as to the status of this language, applies to more recent phases of this debate. This we see as the chief weakness of the position taken by such scholars as Bidwell (1966), Gustavsson (1983) and Witkowski (1984). All three scholars state in unequivocal terms that Rusyn is classifiable as an East Slovak dialect. Reflexes of Common Slavic sound changes are taken as the basis for this classification.

In our opinion, reliance only on this type of evidence suffers on three fronts. Firstly, although West Slavic features do indeed predominate in the Rusyn phonological evidence cited, the same cannot be said of Rusyn morphology or its lexicon, where we find not only East Slovak, but also Polish, Ukrainian, and Serbo-Croatian features (the latter, of course, of a much more recent vintage). (Discussions of this point are found in Birnbaum 1983,1985, and Horbatsch 1962, 1978; Horbatsch 1969 presents a detailed overview of the many-layered Rusyn lexicon.)

Secondly, not all of the synchronic reflexes of Common Slavic forms used in the argumentation carry the same weight. As indicated by Marvan (op.cit.:77), for example, for some of these reflexes, e.g. the Common Slavic consonant clusters *gv/kv* , the number of lexical items in which they appear is so low that one cannot exclude the possibility that they have been incorporated into the language through borrowing, and, therefore, may not be a reflection of the original status quo.

Our third criticism is related to the second. Citing synchronic reflexes of Common Slavic phonological features as the sole criterion for classifying Rusyn is based on the assumption that these reflexes have remained unchanged in the course of the history of the language. Stated another way, these synchronic phonological features are seen as necessarily being immune to change, while, at the same time, all other areas of the language are admittedly vulnerable to it. One of the most important phonological features of present-day Rusyn used in arguing against its East Slavic (Ukrainian) origin, and simultaneously for its West Slavic (East Slovak) origin, is the lack of pleophony. The Common Slavic groups *tort, tolt, tert, telt* are realized in Rusyn as *trat, tlat, tret, tlet* . But it seems that even this "crown jewel" of the argumentation (Marvan, op.cit.:77) is not exempt from the forces of language change. For example, the scholar Tichý (cited in Marvan) considered it possible that these forms may be the result of other than genetic factors. (According to Marvan, Tichý admitted the possibility that rhyming may have played a role in the formation of some of the *ra/le* forms in Rusyn.) We would like to draw attention to another, rarely cited (in Rusyn studies) work, which also calls into question the "invulnerability hypothesis." We refer to the study of Király (1958) which contains a description of linguistic features of the dialects of ten villages in present-day northeastern Hungary. In describing observed variation with regard to a particular feature within a single community, Király writes (172):

> Mestami nabl'udaets'a različie v reči i meždu pokol'enijami. ... V ètom naxodit svoë objasnenie i suščestvovanie dvojnyx form, vstrečajuščixs'a v Abaujsol'noke: *mlatok - molotok, krava - korova, brani - borona, platno - polotno*, i t.d., iz kotoryx polnoglasnye formy upotrebl'ajuts'a v reči starikov. (*ital.* in orig.) (In some places we also find generational differences in speech. ... This explains the existence of doublets which we encounter in Abaújszolnok: *mlatok - molotok, krava - korova, brani - borona, platno - polotno*, etc., where the forms exhibiting pleophony appear in the speech of old people.)

In connection with Király's observation it is worth pointing out that the village Abaújszolnok is situated in Abaúj county, which, as we mentioned earlier, was one of the places of origin of the Yugoslav Rusyns. In addition to Abaúj county, Király's study describes the language situation in two other Hungarian counties, Zemplén and Borsod. They too belong to the original homeland of the Rusyns. In view of this, Király's conclusions are not without interest for Rusyn studies. He claims (171ff.) that although the dialects of all ten villages investigated must be considered to form one linguistic whole *(oni predstavl'ajut jedinstvo),* there is a wide spectrum of differences, such that the speech of some villages is closer to East Slovak, while that of other villages closer to Carpatho-

Carpatho-Ukrainian. Király concludes that it is therefore impossible to view this as an East Slovak dialect, and instead one must consider it a "mixed" dialect, "transitional" between Carpatho-Ukrainian and East Slovak.

This same view, albeit somewhat modified to accommodate the more recent changes in this language due to its contact with Serbo-Croatian, is shared by another group of scholars. It is upheld, for example, by Baričova (1983), Birnbaum (1983, 1985), Duličenko (1972, 1979, 1981), Horbatsch (1962, 1969, 1978), Marvan (1985), Pešikan (1974/75), as well as S.B. Bernštejn (cited in Duličenko 1979) and N.I. Tolstoj (cited in Duličenko 1972). These scholars supplement the genetic evidence (reflexes of Common Slavic phonological structure) with typological information from present-day Rusyn (e.g. Duličenko (1979) provides information on some morpho-syntactic traits of Rusyn; Horbatsch (1969), as mentioned, presents an overview of the multi-layered Rusyn lexicon; Pešikan takes a fresh look at Rusyn phonology in both genetic and typological terms, comparing it to the phonologies of other Slavic languages as well as to its Common Slavic roots). Moreover, Rusyn linguistic data is placed within a wider socio-geographic setting by Birnbaum and Bernštejn, who view the area of the original homeland of the Rusyns as a type of *Sprachbund* . From such a perspective Birnbaum's proposal with regard to the ancestors of the Rusyns becomes quite plausible. The forebears of the Rusyns, according to Birnbaum (1983:14):

> ... settling and living at one time in what is now East Slovakia ... among speakers of a dialectal variety of West Slavic had perhaps taken on a number of diagnostic phonological characteristics from their linguistic environment, thus essentially shifting from an at first East Slavic to a West Slavic form of speech.

It is, however, the final conclusions of this scholar with regard to the place of Rusyn within the Slavic language family that we would most strongly uphold. Birnbaum (19) combines both genetic and typological evidence in concluding that the Rusyn:

> ... phonological system is by and large closer to that of West Slavic (specifically Slovak) while its morphosyntactic structure and its semantically classifiable vocabulary, both as a reflection of its origin and as a result of secondary, partly induced

> convergence, displays characteristics of all three Slavic branches, East Slavic (notably Ukrainian), West Slavic (primarily Slovak), and South Slavic (Serbo-Croatian). (*paren.* in orig.)

It is from this perspective that both the unique and the truly Slavic character of Rusyn, referred to earlier in this discussion, can be understood.

The written language

Just as the Rusyn spoken language has been shaped by various linguistic and socio-linguistic factors, so too the Rusyn written language has been molded over the years not only by the spoken variety, but also by external factors, not the least of which were the convictions of the two most prominent Rusyn grammarians H. Kostel'nik (1886-1948), who has been called "the father" of the Rusyn language (Gustavsson,op.cit.:22), and M. Kočiš (1928-1973), whose legacy includes numerous school grammars, dictionaries, and articles of a popular linguistic nature. It is not our intent to present a detailed investigation either of the development, or the present status of the Rusyn written language. This has been done admirably by Duličenko (1972, 1981). We restrict ourselves only to a few remarks.

Written Rusyn, one of the youngest Slavic "literary micro-languages" (a term coined by Duličenko), marks its beginning in 1904 with the appearance of Kostel'nik's collection of poetry "Z mojoho valala" (From My Village). No less important in the formation of written Rusyn is the year 1923, when the first Rusyn grammar - Kostel'nik's "Hramatika bačvan'sko-ruskej bešedi" - appeared, assuring the further development of the Rusyn literary language on the basis of codified norms. (Rusyn orthography, devised by Kostel'nik, makes use of the Cyrillic alphabet in its Ukrainian version (see Tables 1.1, 1.2, and 1.3) with only minor deviations.) The period after WWII, particularly, the 1960's to the present, are notable for an amazing proliferation of Rusyn literature and a remarkable expansion of the functions of the written language, which has been strengthened by new codified norms laid down in several school textbooks by M. Kočiš.

Table 1.1: The Rusyn Alphabet*

А а, Б б, В в, Г г, Ґ г, Д д, Е е, Є є, Ж ж, З з, И и, Ї ї, Й й, К к, Л л, М м,
Н н, О о, П п, Р р, С с, Т т, У у, Ф ф, Х х, Ц ц, Ч ч, Ш ш, Щ щ, Ю ю, Я я, ь

* The Rusyns use the Cyrillic alphabet in its Ukrainian version with the one major difference that the Rusyn letters {и} and {ї} both represent the phoneme /i/: {и} appears after an unpalatalized consonant, {ї} occurs after a palatalized consonant, e.g., {диктат} /diktat/ "dictation" vs. {дїдо} /d'ido/ "grandfather." As in the Ukrainian alphabet, the letter {ї} appears also word initially and after vowels, where it represents /ji/, e.g., {їх} /jix/ "theirs," {руїна} /rujina/ "ruin." The orthographic pairs {а:я}, {е:є}, and {у:ю} have the same distribution as {и:ї}. (Kočiš 1980 is a detailed description of the Rusyn orthographic system.)

Table 1.2: The Rusyn Vowels**

Phonemic transcription			In the orthography		
i		u	и (ї)		у (ю)
e		o	е (є)		о
	a			а (я)	

** Reproduced from Pešikan (1974/75:111).

Table 1.3: The Rusyn Consonants***

Phonemic transcription

p		t						t′	k	
	f		s			š				h
				c			č			
b		d						d′	g	
	(v)		z		ž					γ
				ʒ		ǯ				
v					r			j		
					l			ļ		
m					n			ń		

In the orthography

п		т						ть	к	
	ф		с			ш				х
				ц			ч			
б		д						дь	ґ	
	(в)		з			ж				г
				дз			дж			
в					р			й		
					л			ль		
м					н			нь		

*** Reproduced from Pešikan (1974/75:112).

One of the characteristics of the Rusyn written language is its tolerance of variability. The causes of this variability are rooted, on the one hand, in the spoken language which, according to Duličenko (1981:112) is replete with "phonetic and grammatical doublets ... generally accepted ... and equally dispersed" throughout the entire Rusyn dialect area in Yugoslavia. It is Duličenko's view that these doublets attest to the mixed and transitional character of the Rusyn spoken language.

In addition to these language-internal factors contributing to the variability in the written language, Duličenko adduces also several language-external causes. These, according to Duličenko (op.cit.:198), are not language-specific, but are characteristic of all "literary micro-languages." As one of the primary reasons for such variability he considers the role that individual grammarians play in establishing the written code in these languages. Although he doesn't elaborate on this point, it relates no doubt to the often conflicting recommendations made by these grammarians with regard to specific points of language usage (cf. for example the grammars of Kostel'nik and Kočiš with regard to indefinite pronouns (as cited in Duličenko 1981: 207). The recommendations of these two Rusyn grammarians differ both with regard to the forms themselves, and to the declinability of these forms). Another factor contributing to the variability of the written language is, in Duličenko's view (op.cit.:198), the possible influence of a foreign language. (In the case of Rusyn, both Ukrainian and Serbo-Croatian have served as important sources for the Rusyn grammarians in their efforts to establish grammatical and lexical standards (207). As pointed out by Duličenko (216), the Rusyn written language to this day continues to be heavily influenced by Serbo-Croatian.) And, finally, Duličenko (198) points out that traces of an earlier pre-codification literary norm may also be responsible for variability in the written language. (The pre-codification literary norm for Rusyn, i.e., the norm prior to the twentieth century, was also marked by diglossia (28): in the religious sphere Church Slavonic (in its Russian-Ukrainian redaction) was used, while the secular sphere made use of the West Ukrainian (artificial) literary language known as "jazyčije.")

The variability evident in the Rusyn written language mirrors in many respects the variation that exists in spoken Rusyn. Although both varieties of the language (written vs. spoken) are responsive to different forces, in a small tightly-knit community such as that of the Rusyns, they are not entirely divorced from each other. An intense involvement of leading members of the community in discussions dealing with the status, role, problems of codification, etc. of the Rusyn language can be traced in this century to the 1919 founding congress of the "Ruske Narodne Prosvitne Družtvo" which debated the question of which language to adopt as the written medium for the Rusyns. Interest in language-related topices revived with renewed force after WWII, when we witness the publication of numerous textbooks, dictionaries, and periodical literature. This interest continues unabated to this day, for example, on the pages of the journal "Tvorčosc," within the scientific society "Družtvo za ruski jazik i literaturu," and on the university level (the University of Novi Sad, as mentioned earlier, includes a Chair for Rusyn Language and Literature).[3]

Accompanying the heightened interest, at least among the better educated members of the community, in problems pertaining to their language, is an awareness of the unique character of Rusyn. The opinion expressed by the Rusyn intelligentsia of the 20's and 30's: "Mi sebe zrobeli jazik, kotri vecej n'e pripada n'ikomu l'em nam samim" (we created a language for ourselves, which no longer belongs to anyone but ourselves) (cited in Duličenko 1981:30) - is, as became evident in discussions with Rusyns during our field work, a conviction which is still prevalent today and equally relevant in the face of the perceived threat of language decay due to assimilation to Serbo-Croatian. Such keen awareness of language issues on the part of many Rusyns no doubt may also influence their performance in the spoken realm.

Our study deals, of course, not with the written, but rather with the spoken language.

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[3] Duličenko (1981:226ff.) provides a detailed chronology of these language-oriented activities of the Rusyns.

Nonetheless, we feel that the interplay between the two, and especially the prominence which language-related questions occupy in the Rusyn literature (in a broad sense) may not be insignificant in speech production of individual members of the community. And although we do not investigate this particular interrelationship any further in our study, we feel it deserves mention, as offering a potential explanation of the linguistic behavior of some of our informants.

An overview of the current study

It was precisely while leafing through numerous written texts of Rusyn that the impetus and the ideas which led to this study emerged. We noticed a good deal of variation in texts with regard to several morphophonemic alternations in the Rusyn nominal system, and chose to investigate at close range the treatment of some of these alternations by live speakers.

The alternations which our study came to focus on fall within the system of masculine nouns and are of two types: what we will call the "velar palatalization" and the "dental palatalization." The former includes only one set of alternants, namely, /k/~/c/ in the nominative plural of some k-stem masculine nouns before the desinence /-i/. Those masculine k-stem nouns which do not exhibit this alternation retain the stem-final velar unchanged before the above-mentioned nominative plural desinence. The "dental palatalization" includes a set of six alternants, namely, /d/~/dz/, /t/~/c/, /z/~/ž/, /s/~/š/, /l/~/l'/, and /n/~/n'/, and appears in some d-stem, t-stem, z-stem, s-stem, l-stem, and n-stem masculine nouns, respectively. This alternation occurs in the locative singular before the desinence /-e/. There is another desinence which also occurs in the locative singular of masculine nouns, namely, the desinence /-u/. Where this ending appears the stem-final dental consonant remains unchanged, i.e., dental palatalization does not take place.

Written texts of Rusyn contain ample instances of variation in the use of these two types of morphophonemic alternations, and even the recommendations of Rusyn grammarians are less than steadfast in this area. Kočiš (1977:55), for example, in describing the locative singular of masculine nouns, is unable to state with a great degree of certainty when to use the desinence /-u/, which does not trigger dental palatalization, and when, on the other hand, to use the ending /-e/, which does trigger this palatalization, but rather makes the following interesting comment: "...in these instances it is necessary to rely on one's linguistic intuition *(jazikove čuvstvo)* until such a time when one ending will triumph over the other." It is, therefore, to be expected that the same type of variation will probably exist in the spoken language, and that an investigation of this variation might contribute to our understanding of the more general questions of morphophonemic variability, productivity, and possibly even change.

Our prediction as to the existence of variation among the speakers of Rusyn with regard to the morphophonemic alternations mentioned proved to be correct, and the investigation of this variation is presented in Chapters 6 and 7. We begin, however, with a discussion of the theoretical framework within which these empirical observations are to be examined. The first of these is the topic of morphophonemics. In Chapter 2 we review some recent approaches to this rather controversial area of linguistics with a special focus on theories that have served as the basis for our study. Chapter 3 continues our theoretical discussion, but turns to the questions of language variability, productivity, and change. We present two theoretical models, developed by linguists working in seemingly different areas of language: that of William Labov in the area of sound change, and that of Joan Bybee in the area of morphology. Conjoining these two linguistic models provides, we feel, a potentially stronger model capable of explaining the dynamics of language variability, productivity, and change, in general, and morphophonemic variability, productivity, and change, in particular. Other relevant studies focusing on these language processes are also discussed. In Chapter 4 we present diachronic and synchronic data from related and neighboring Slavic languages, in an attempt to gain some historical depth and a more current perspective on the two morphophonemic alternation patterns in Rusyn. Chapter 5 describes our field work, with reference to our informants and the linguistic data elicited from them, and outlines the analytical technique used in interpreting the collected data. As mentioned earlier, the results of our investigation of the "velar palatalization" pattern are discussed in Chapter 6, while our study of the "dental palatalization" pattern is presented in Chapter 7. Finally, in Chapter 8, we combine the major conclusions reached with regard to both alternation patterns, and discuss their implications for the proposed theoretical models.

CHAPTER TWO
RECENT APPROACHES TO MORPHOPHONEMICS

Our study investigates the treatment of two morphophonemic alternations in Rusyn by native speakers of this language, with the goal of gaining an insight into the processes of language variability, productivity, and change. Before proceeding to a discussion of the theoretical models within which our study has been cast, we present in this chapter a brief overview of recent approaches to morphophonemics.

Our own study of the two morphophonemic alternation patterns supports most closely, we feel, the approach to morphophonemics adopted by Joan Bybee (1985, 1988), who accords morphophonemic alternations a clearly different status from that granted to purely phonologically conditioned processes. Indeed our investigation has shown that morphophonemics can be viewed as a transitional level not only between phonology and morphology, but even between phonology, morphology, and semantics.

The roots of morphophonemics

Morphophonemic studies have a rich and long tradition. They take their source in the early classical studies of sandhi in Sanskrit by Panini and other Indian grammarians, and the studies of vocalic alternations in the Semitic languages undertaken by early Arab and Hebrew linguistic investigators. This early non-western grammatical tradition was to a great degree influential in directing, centuries later, the attention of western scholars to problems in the area of morphophonemics. The value of the linguistic investigations of these early scholars remains undiminished to the present. However, contemporary linguistic research in the area of morphophonemics probably owes its greatest debt to the European linguistic tradition, whose foundations were laid by J. N. Baudouin de Courtenay and M. Kruszewski, and were further developed by N. S. Trubetzkoy and likeminded linguists of the Prague School (an overview of the classical and the European traditions is presented in Kilbury 1976).

Despite the long and rich tradition which morphophonemics brings to linguistics, it has been a highly controversial area of language study. Even the term itself, "morphophonemics," according to H.A. Gleason (cited in Kilbury, op.cit.:2) "... is one of the most vexed technical terms in linguistics." The problem of terminology reflects a deeper controversy relating to the status of morphophonemics within the general framework of theories of language, i.e., is it valid to isolate morphophonemics for independent study, and what is the relationship of morphophonemics to other areas of language. Indeed in the post-Bloomfield era of North American linguistics, specifically within the generative framework, the unenviable fate of morphophonemics has been shared by morphology in general, whose submergence and ultimate resurgence has been labelled as "one of the more striking developments in the history of the generative paradigm" (Hammond and Noonan 1988:1). Since the discussions of the post-Bloomfield period relating to morphophonemics have been well-documented by numerous scholars (e.g. Kilbury, op.cit., Hammond and Noonan, op. cit., Ford and Singh 1983), we confine ourselves to a very brief sketch of the generativist position, followed by an outline of alternative approaches to morphophonemics.

The generative approach to morphophonemics

Whereas in his early works N. Chomsky maintained a distinction between morphophonemes and phonemes (Kilbury, op. cit.: 108), the appearance in 1959 of M. Halle's *Sound Pattern of Russian* saw a temporary merger of this distinction in generative phonology. Arguing for the necessity of preserving the generality of rules when faced with an assymetry in the sound system (such as exists in Russian, where voicing is distinctive for all obstruents except /c/, /č/ and /x/, which, having no voiced counterparts phonemically, observe the general voicing pattern on an allophonic level), Halle (22-23) pointed out that generality would be better served if the phonemic representation was dispensed with and only the morphophonemic one maintained. (This would obviate the necessity of writing a separate phonemic rule stating the allophonic distribution of the above-mentioned three pairless obstruents, and create the possibility of writing a single voicing rule instead to cover all the Russian obstruents.) The choice of preserving morphophonemic representations rather than phonemic ones was justified by Halle on the grounds that the former provide "the means for accounting for ambiguities due to homophony."

This position was reversed in 1968 with the appearance of Chomsky and Halle's *The Sound Pattern of English* (11):

> The term "morphophonemic representation" seems to us appropriate only if there is another linguistically significant level of representation, intermediate in "abstractness" between lexical (phonological) and phonetic and meeting the conditions placed on "phonemic representation" in modern structural linguistics. We feel, however, that the existence of such a level has not been demonstrated and that there are strong reasons to doubt its existence. We will make no further mention of "phonemic analysis" or "phonemes" in this study and will also avoid terms such as "morphophonemic" which imply the existence of a phonemic level.

Although the Chomsky and Halle analysis has been labelled "morphophonemic" in character (Szpyra 1989:1), what this, in fact, meant was (ibid.):

> ...that no distinction is made between the alternations conditioned purely phonologically and those which are, to some extent, morphologized; a set of ordered phonological rules derive all the allomorphs from a single underlying form set up for every morpheme.

In the lively linguistic debate of the early 1970's, spurred by the Chomsky and Halle analysis, many problems of this approach were pointed out (for a discussion of these see Szpyra, op.cit., as well as Hammond and Noonan, op.cit.), necessitating changes in the theory, and giving rise to new models both within the generative paradigm and outside it. Ultimately, within the generative framework, two approaches to the phonology-morphology interaction appeared. According to the first one, which has been labelled "separational" (Szpyra, op.cit.:27), "morphology and phonology constitute two separate components with phonological rules operating on the output of morphological rules" (ibid.). This approach can undoubtedly be traced to Halle's 1973 proposal to include an autonomous morphological component into a model of language.

The second approach, which has been called "integrational" (ibid.), has been espoused by proponents of Lexical Phonology. Within this model "morphological processes and lexical phonological rules are not separate ... but are all placed in the lexicon and alternate in the formation of lexical items" (ibid.). Thus, as with the "separational" approach, Lexical Phonology includes a morphological component, referred to as the "lexicon." But, unlike the former approach, Lexical Phonology claims that a subset of phonological rules applies within the lexicon (i.e., the morphological component), and that "the application of phonological rules alternates with the apllication of morphological rules in such a way that each operates on the output of the other" (Hammond and Noonan, op. cit.:6). (For a more detailed elaboration of Lexical Phonology refer to Jensen 1990.)

Thus, although within the generative paradigm the morphological component has in recent years indeed been "resurrected," morphophonemics itself has not enjoyed this comeback. In fact, the assumption has been maintained that morphophonemics is a part of phonology (Ford and Singh, op.cit.:64), and hence the many interactions between morphophonemics, on the one hand, and morphology, syntax, and even semantics, on the other, continue to be ignored.

Alternative approaches to morphophonemics

Some problems with the generativist position

As mentioned previously, shortcomings of the Chomsky and Halle approach to morphology of 1968 were pointed out both by proponents and by opponents of the generative paradigm. Two issues raised particular concern about this model: its inability to distinguish between "natural" and "unnatural" rules (spurred by the drive for the "simplest" solution), and the phonological abstractness not only of the rules, but also of the representations (the consequences of the debate of these issues are outlined by Hammond and Noonan, op.cit.:10 ff.).

With regard to morphophonemics, its total merger with phonology within the Chomsky and Halle model (an extension of Halle's 1959 proposal) was seen as misguided early on. In 1960 the Slavist E. Stankiewicz, for example, expressed the view that "morphophonemic alternations are an integral part of the morphological structure of a language, reflecting the diversity and hierarchy of its subsystems" (202), and argued against the merger of morphophonemic and phonemic representations. Stankiewicz (1967 as cited in Kilbury, op.cit.:114) pointed to the loss for the linguistic theory if morphophonemic alternations are implanted into a purely phonological environment:

> The revamping of morphologically conditioned into phonologically conditioned rules has ... the disadvantage of obscuring the role of morphophonemic alternations in the grammatical system of a language, a role which was so emphatically pointed out almost a hundred years ago by Baudouin de Courtenay.

The function, according to Stankiewicz, which morphophonemic alternations perform in a language is a grammatical one - the expression of grammatical oppositions (1960:185). Moreover, morphophonemic variation, as pointed out by this Slavist (1967: 4), can serve as a typological criterion for language classification.

Rooted in the view that morphophonemics is best treated within morphology, rather than phonology, is the theoretical model of phonology proposed by Linell (1979) and supported with modifications by Ford and Singh (1983), as well the model of morphology developed by Bybee in her numerous works (e.g. 1985, 1988; Bybee and Pardo 1981). Both Linell's and Bybee's approaches fall outside the generative framework. They incorporate, however, concepts which facilitate the description of linguistic processes associated with morphophonemic variability, productivity, and change. It is for this reason that they are of particular interest to our study.

Morphophonology according to Linell[1]

Per Linell rejects the merger of morphology and phonology implemented within the "orthodox" generative paradigm, i.e., within the 1968 Chomsky and Halle framework, and argues instead that although "problems of morphology and morphophonology are closely interrelated with phonology ... they should be handled outside phonology proper, rather than in one comprehensive 'phonological' component" (128-130). Morphophonology, according to Linell "belongs to morphology" (142), since, as he states (129), it concerns "those phonological adjustments which, according to the rules of the language, are dependent consequences of a morphological or syntactic change of expression," i.e., morphophonological alternations reflect a change in morphological or syntactic categories.

Linell distinguishes two types of rules which have morphophonological effects: "phonotactic rules," which he calls PhtRs and which are "valid for all surface forms, whether participating in alternations or not," and "non-phonotactically motivated morphophonological rules proper," called MRPs, which are "needed solely for the purpose of taking care of certain morphophonological alternations." Thus, he includes into morphology not only non-automatic alternations, the MRPs (i.e., morphologically conditioned, but phonotactically unmotivated alternations, for example, those in the Slavic languages which are associated with the First or Second Palatalizations, or the two alternations which are at the focus of our study - the "velar" and the "dental" palatalizations in Rusyn), but also automatic alternations, the PhtRs (e.g. the English regular plural formation), which, while having a morphological function, adhere also to general phonotactic constraints of a particular language.

The inclusion of the PhtRs into morphology in Linell's model has been criticized and modified by Ford and Singh (op.cit.). These scholars have argued that "alternations motivated or governed by well-formedness conditions ... defined over domains such as the syllable and the word" should be treated "as phonological, irrespective of their function" (64). Other alternations "not so governed" (i.e., the MRPs in Linell's model) should be treated "as morphological" (ibid.). (Indeed the studies of Derwing and Baker (1977, 1979) on the acquisition of the regular English plural corroborate the important role that purely phonetic features play in this process, and support the view that the rules involved "might be of a very general phonotactic nature, and hence operative across more than one morphological category" (1977:100).)

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[1] Linell uses the term "morphophonology" to refer to what we have been calling "morphophonemics." In outlining Linell's theory we will respect his terminological preference, and restate only that the two terms are synonymous.

Linell, of course, recognized the problem himself. He admitted that the status of PhtRs within the morphology is much more ambiguous than that of MRPs, since the former perform also other than morphological duties in the grammar. We do not delve into this issue any further, but instead turn to another concept discussed by Linell which, although not invalidating the importance of the proper placement of the above two rule types, alleviates the pressure of establishing rigorous boundaries between categories from a diachronic perspective and introduces some tolerance of ambiguity into the synchronic situation.

The concept referred to is that of the "fuzziness" of rule boundaries. Linell points out that there is nothing surprising about the fact "that many specific rules in various languages are not functionally unambiguous" (210 fn.). Such functional ambiguity should indeed be expected since languages change. Moreover, not only rule types "but all linguistic categories seem to be fuzzy" (ibid.). With reference to rule boundaries from a diachronic perspective, fuzziness occurs because "rules no doubt migrate from one category to another over time" (209). Since, at any point in time "there must be rules which are in the process of changing their typological status" (ibid.), fuzziness of rule boundaries must also be expected from a synchronic perspective.

Interestingly enough, according to Linell, the direction of a rule migration need not necessarily follow a one-way path. Thus, not only is the migration from a more general phonotactic rule to a less general morphophonological rule possible, but it may be the case that "rules which vacillate between being morphologically conditioned PhtRs and fairly general MRPs may perhaps get (re)established as PhtRs by some opacity-reducing mechanism" (210). Therefore, although Linell upholds what he calls the "traditional distinction between morphophonology and phonology proper," he points out that "facts do not support a very radical position in which one would claim that rules and regularities fall unambiguously into completely distinct categories" (210-211).

Two further points regarding Linell's theoretical model need to be made briefly. The first concerns his estimation of the role of morphophonological rules which govern alternations (MRPs) in a grammar, while the second pertains to the mechanisms involved in the functioning of the model. With regard to the rules, Linell claims that "all MRPs ... should be considered as synchronically unmotivated complications of the paradigm" (135). It is unclear whether Linell means that morphophonological alternations are phonologically unmotivated, or whether he means that they are both phonologically, as well as morphologically unmotivated. Whereas the former claim would not be disputed, the latter, of course, would be challenged by such linguists as the aforementioned Stankiewicz, or Bybee, whose model we will turn to shortly.

Linell's general departure from the generative paradigm manifests itself also in the mechanisms which he proposes for the functioning of his model. He explains that the morphophonological alternation rules (the PhtRs and the MRPs) are part of what he calls "morphological operations," i.e., morphological processes "in which a speaker constructs a new word form on the basis of other ... lexicalized forms" (128). The lexical forms which serve as input into the morphological operations are not abstract forms, but rather "surface forms, i.e., base forms or stems" (ibid.). The morphological operations themselves correspond in Linell's model "fairly well to the traditional idea of extension by regular analogy" (129). Indeed, as Linell states, "there is evidence that the model of 'analogically' extending a relation between surface forms is more realistic than the OGPh ("orthodox generative phonology" - MH) account of morphological productivity in terms of derivations from abstract morpheme configurations to surface forms" (ibid.).

The concept of analogy and the use of surface forms in morphological operations is central also to the model of morphology developed by Joan Bybee. In fact, her model agrees in most aspects with the ideas proposed by Linell. Bybee, however, introduces some dynamic mechanisms which secure the functioning of an analogy-based model of language. We present a fuller discussion of Bybee's model in the next chapter. Here we summarize only some of her views on morphophonemics.

Morphophonemics in Bybee's model of morphology

Like Linell, Bybee accords morphophonemic alternations a different status than that granted purely phonologically conditioned processes. A morphophonemic alternation in her definition is one (1985: 6):

> ... which, when described in terms of features present on the surface (that is, without reference to abstract phonological units) requires reference to morphological, syntactic or lexical information, and cannot be described using only phonological information.

Since Bybee's model (1985, 1988) draws no strict dichotomy between rules and representations (we will elaborate on this in the next chapter), morphophonemic and morphological rules are placed along a continuum (we are reminded of Linell's appeal to the concept of "fuzziness" of rule boundaries to allow for the "migration" of rules from one type to another). The proposal of such a continuum appears already in an earlier work (Bybee and Pardo 1981:961):

> There is a continuum ... from alternations that are considered exceptional and listed in the lexicon without any associated rules, to alternations governed by rules that are bound to particular lexical items, to alternations governed by free rules.

It is made more explicit in Bybee's later work (1988:123), where she states:

> Morphological and morphophonemic rules cover the full range of types, from extremely productive and general ... to semiproductive ... to minor rules ... to 'rules' dealing with admitted irregularities ... and finally suppletion.

Unlike Linell, however, who views morphophonemic alternations (the MRPs) as "non-functional complications of the grammar" (op.cit.:142), Bybee (1985:6) concords more with Stankiewicz when she claims that "morphophonemic alternations in surface forms tend to diagram or reflect the semantic relations among these forms." In fact, as Aronoff (1987:115) points out in his review of her work, Bybee adheres to the general principle that "meaning determines (at least certain aspects of) form."

Drawing not only on distributional data, but also on data amassed from language acquisition (Bybee Hooper 1979) and language change (Bybee and Brewer 1980), Bybee is able to conclude that morphophonemic alternations diagram, in particular, "two aspects of the organization of paradigms." One of these, is the relation between the "basic" vs. the "derived" forms, and the other is the "degree of relatedness" among the forms in a paradigm.

Within her analogy-based model Bybee outlines two dynamic mechanisms which connect lexical representations into intricate networks. These are the mechanisms of the "lexical strength" of the representations, and the "lexical connections" which the representations form. We will explore these notions in more detail in the next chapter. Here we will add that for Bybee both of these notions are gradient and dynamic, which allows both for differences in productivity of various morphophonemic alternations, as well as for different conceptualizations of morphophonemic patterns by speakers -- a source of variation and change within the language community.

From our brief discussion of recent approaches to morphophonemics we proceed now to the elaboration of two theoretical models of language and language change which we propose as the theoretical framework for our study.

CHAPTER THREE
TWO MODELS OF LANGUAGE AND LANGUAGE CHANGE

In this chapter we turn our attention to the questions of language variability and change. We focus on two theoretical models well-suited to deal with the these questions: the model of William Labov developed for the area of sound change, but relevant to language change in general, and the model of Joan Bybee advanced for morphology including morphophonemics. Both of these models serve as major inputs into our study of morphophonemic variation and change in Rusyn.

The sociolinguistic approach to the study of sound change

Empirical foundations

For students of language change the year 1968 marks an important turning point. It was in that year that the seminal paper "Empirical Foundations for a Theory of Language Change" by U. Weinreich, W. Labov, and M. Herzog (WLH) appeared, which both rectified existing misconceptions about the very nature of language, thereby clearing the way for more insightful theories of language, and at the same time provided a holistic framework for the study of language change within such theories. The principles set forth by WLH created the framework for the innumerable studies of sound change carried out by Labov, which have by now become classical examples of empirically-based linguistics. A discussion of the Labovian model of sound change cannot therefore be divorced from a discussion of the principles laid down by WLH. Speaking metaphorically, the Labovian model is the incarnation of the WLH principles. For our purposes, therefore, the two are synonomous.

No doubt one of the major contributions of the theory of language change advanced by WLH was that it made explicit the close relationship that exists between language and community, i.e., between linguistic and social factors, particularly during language change.

This interrelationship had, of course, not been unnoticed by earlier scholars. Perhaps one of the most eloquent statements on this topic was made by A. Meillet in 1906 (cited in WLH, op.cit.:176):

> Language is an institution with an autonomy of its own; one must therefore determine the general conditions of development from a purely linguistic point of view; . . . but since language is [also] a social institution, it follows that linguistics is a social science, and the only variable element to which one may appeal in order to account for a linguistic change is social change, of which language variations are but the consequences - sometimes immediate and direct, and more often mediated and indirect.

WLH must be credited, however, with going beyond mere recognition of this close interrelationship between language and society, and placing it instead as a cornerstone of a theory of language change, which therefore received as a prerequisite the analysis of social structure within which language is embedded. As a result, the perspective on language adopted by WLH was much enriched. Language came to be viewed "as an instrument of social communication, simultaneously serving to represent information, establish group identification, and accommodate to social situations" (Labov 1982:84).

From such a perspective on language emerged two important principles of the WLH model, or, as Labov (op. cit.: 17) has called, two of its "empirical foundations," on the one hand, that of "orderly heterogeneity," and, on the other, that of the linguistic community as the object of description.

The first of these principles required the resolution of a dilemma which had perplexed linguists for several generations, namely, the apparent incompatability between language structure, on the one hand, and language change, on the other. For how can a theory of language be structural and at the same time deal with the phenemenon of change, i.e., be historical - was the unresolved question created by what WLH have called the "Saussurean dilemma" (100-101):

> For the more linguists became impressed with the existence of structure of language, and the more they bolstered this observation with deductive arguments about the functional advantages of structure, the more mysterious became the transition of a language from state to state. After all, if a language has to be structured in order to function efficiently, how do people continue to talk while the

> language changes, that is, while it passes through periods of lessened systematicity? Alternatively, if overriding pressures do force a language to change, and if communication is less efficient in the interim (as would deductively follow from the theory), why have such inefficiencies not been observed in practice? (WLH, op.cit.:100-101; paren. in orig.)

At the core of the "Saussurean dilemma," as pointed out by WLH, lies the mistaken parallelism between structure and homogeneity. This unwarranted comparison forces the acceptance of the "homogeneity of language ... as a prerequisite for analysis" (99), and simultaneously leads to the rejection of "heterogeneity within the language custom of a community ... as a subject of systematic description," viewing it instead "as a kind of tolerable imprecision of performance" (121). This, of course, has been the prevalent view among American descriptive linguists of the first half of this century, and more recently, among the generative grammarians interested primarily, as stated by Chomsky (1965: 3), in "an ideal speaker-listener, in a completely homogeneous speech-community."

Such theories of language which take as their input descriptions of language as a homogeneous object, are, as stated by WLH (144), not only "needlessly unrealistic," but are also "contrary to fact." Because, as WLH (101) stress, language *is* heterogeneous, and the "nativelike command of heterogeneous structures is not a matter of multi-dialectalism or 'mere' performance, but is part of unilingual linguistic competence." Moreover:

> ... deviations from a homogeneous system are not all errorlike vagaries of performance, but are to a high degree coded and part of a realistic description of the competence of a member of a speech community (125).

Therefore, according to WLH (101), "the key to a rational conception of language change - indeed, of language itself - is the possibility of describing orderly differentiation in a language serving a community." For, as they point out (99):

> ... a model of language which accommodates the facts of variable usage and its social and stylistic determinants not only leads to more adequate descriptions of linguistic competence, but also naturally yields a theory of language change that bypasses the fruitless paradoxes with which historical linguistics has been struggling for over half a century.

To recapitulate briefly, the solution to the "Saussurean dilemma," as argued by WLH, "lies in the direction of breaking down the identification of structuredness with homogeneity" (101), and instead coming to perceive language, whether from a diachronic or synchronic perspective, "as an object possessing orderly heterogeneity" (100). The description of this "orderly heterogeneity," conditioned both by linguistic and by social factors, thus becomes a guiding principle both for the linguist and for linguistic theory.

As we mentioned earlier, the second "empirical foundation" of the theory of language change espoused by WLH is that of the linguistic community as the object of linguistic description. This principle, of course, follows from the view of language as embedded in social structure, where social functions play a determining role in language usage. On such a view, therefore, "idiolects do not provide the basis for self-contained or internally consistent grammars" (188), but must be fitted into the mosaic of the entire speech community. This point was restated succinctly by Labov in one of his later studies (1972c:124):

> Indeed, it was found that the speech of most individuals did not form a coherent and rational system, but was marked by numerous oscillations, contradictions and alternations which were inexplicable in terms of a single idiolect. ... But when the speech of any one person in any given context was charted against the overall pattern of social and stylistic variation of the community, his linguistic behavior was seen to be highly determined and highly structured.

This is not to say that the Labovian model denies the important role that individuals may play in motivating and directing language change. (The search for innovators of linguistic change was undertaken by Labov in his 1980 study "The Social Origins of Sound Change" to which we will return later.) But the role of these individuals is meaningless unless seen against the backdrop of the linguistic community in general.

The importance of the linguistic community is enhanced all the more, since, as WLH (188) state:

> Linguistic change is transmitted within the community as a whole; it is not confined to discrete steps within the family. Whatever discontinuities are found in linguistic change are the products of specific discontinuities within the community, rather than inevitable products of the generational gap between parent and child.

A further consequence of this view, as pointed out by Hock (1988:660), is that it casts doubt on attempts "to locate the motivation of linguistic change in early child language acquisition," for "linguistic change-in-progress affects the whole spectrum of society, including the older generations."

Summing up the above discussion, we can state that within the Labovian model linguistic change is viewed against the background of the entire linguistic community through which the change proceeds by means of patterned variability.

The observability of sound change

In laying down the empirical foundations for a theory of language change, WLH rejected still another misconception held by many of their predecessors and contemporaries, namely, that sound change cannot be observed. As formulated, for example, in 1958 by Hockett (cited in WLH, op.cit.:129), "sound change is constant and slow," but since it is infinitesimal it is unobservable; a "phonemic restructuring, on the other hand, must in a sense be absolutely sudden," but because of its instantaneous character it too is unobservable. The Labovian model adopts the opposite perspective, claiming instead that sound change can be observed and described. For this purpose the concept of a "linguistic variable," described as "a variable element within the system controlled by a single rule" (WLH, op.cit.:167) is introduced. This "linguistic variable" is the net product of both linguistic and social factors, and is itself subject to social evaluation. It is the linguistic variable then, that is the unit of change.

An adequate study of linguistic change within the Labovian model must deal with three problems (Labov 1972d:161-162):

> 1. The *transition* problem ... to find the route by which one stage of a linguistic change has evolved from an earlier stage. ...
> 2. The *embedding* problem ... to find the continuous matrix of social and linguistic behavior in which the linguistic change is carried. ...
> 3. The *evaluation* problem ... to find the subjective (or latent) correlates of the objective (or manifest) changes which have been observed. (*ital.* and paren. in orig.)

Thus a study of change in progress has a three-pronged task: it must find the route taken by the linguistic variable, describe the sociolinguistic matrix in which this variable is embedded, and establish the social meaning of the change to which the linguistic variable has been subjected.

Whereas the three above-mentioned problems pertain to a change in progress, or to the implementation of a change, a theory of language change, as seen within the Labovian model, must address two further problems: the "constraints problem" which attempts to "determine the set of possible changes and possible conditions for change" (WLH, op.cit.:183), and the "actuation problem" which seeks answers to such questions as "what factors can account for the ... changes?" and "why do changes in a structural feature take place in a particular language at a given time, but not in other languages with the same feature, or in the same language at other times?" (102).

Since most of the studies carried out by Labov and other linguists who have adopted the sociolinguistic approach deal with the implementation of linguistic change, as well as with its actuation (although to a much lesser degree), we turn now to a brief sketch of some of their main findings.

Implementation of change through the linguistic structure

As discussed above, the issues of the implementation and the actuation of linguistic change must be viewed from a two-fold perspective - that of linguistic structure and that of social structure, since within the framework of the sociolinguistic model, linguistic change proceeds through the linguistic system conditioned and even induced by social factors. We begin with an examination of issues related to the spread of sound change through the linguistic system.

Is sound change regular and exceptionless, affecting all relevant sounds at once, or does it proceed gradually through the lexicon, on a word by word basis? Restated another way, is the basic unit of change the phoneme or the word? These questions have been central to what has been christened as the "Neogrammarian controversy" (Labov 1981), which has polarized linguists into two seemingly irreconcilable camps. The adherents of the Neogrammarian position maintain that although sound change is phonetically gradual, "proceeding by imperceptible increments," it is at the same time lexically abrupt, "affecting all relevant words simultaneously" (270).

This point of view, tracing its roots to the nineteenth century Neogrammarians, and maintained by American structuralists and generativists, was challenged in 1969 by Wang, who pointed out that "the gradual view of phonological change cannot be correct for many types of sound change" (240), for example, for sound changes resulting in metathesis, or involving voicing, nasalization, segment addition or deletion, etc. For changes of this type a gradual phonetic continuum simply does not exist, and therefore, by their very nature such changes cannot be gradual, but rather must be abrupt. Moreover, other non-phonetic changes, e.g. morphological, lexical, syntactic changes, also "cannot be accommodated at all within the gradual view" (241). Therefore, as concluded by Wang (ibid.), "at least a large class of sound changes must be implemented abruptly, i.e., must go directly from *X* to *Y* without passing through minute intermediate stages." The second part of the Neogrammarian argument, namely, that sound change is always lexically abrupt, was also challenged by Wang (ibid.), who stressed that the "process of diffusion within a speaker's vocabulary may likewise be thought of as being either abrupt ... or gradual" affecting "the relevant morphemes severally in succession." Wang then proposed four possibilities for a sound change to be implemented through an individual's lexicon (ibid.):

(1) phonetically abrupt and lexically abrupt
(2) phonetically abrupt and lexically gradual
(3) phonetically gradual and lexically abrupt
(4) phonetically gradual and lexically gradual

Possibility (3) corresponds to the Neogrammarian position, while possibility (2) to the position proposed by Wang, which came to be known as "lexical diffusion". [1]

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[1] Illuminating discussions and numerous examples of lexical diffusion as a mechanism of linguistic change are contained also in Wang 1977, and Chen and Wang 1975.

Labov's resolution of the "Neogrammarian controversy" was based on the attempt to find the conditions under which each of the sides can be correct, rather than to establish the supremacy of one position over the other. Reviewing numerous sound changes in English, Labov came to the conclusion that Neogrammarian-type sound change takes place *within* vowel subsystems, e.g. within "the subsystem of short vowels, or the subsystem of up-gliding diphthongs, or in-gliding diphthongs: raising, lowering, fronting, backing, rounding, unrounding, nasalization" (297). The Great Vowel Shift in English, according to Labov, "consisted primarily of sound changes of this type" (ibid.). With regard to consonants, Labov points out that changes in manner of articulation are "most often phonetically gradual and lexically regular" (302), i.e., they are characterized by Neogrammarian regularity.

Lexical diffusion, on the other hand, is found in sound changes which take place *across* vowel subsystems, such as vowel shortenings and lengthenings. For example, the shortening of Middle English long $\bar{e}$ occurred in such words as *head, dead, breath, sweat,* but left *bead, read, mead,* etc. unaffected (297). In attempting to answer the question of why such changes should be irregular, Labov suggests, that they are not sound changes in a literal sense, but are rather "changes in membership in abstract classes of long or short ... vowels," and as such introduce a "whole set of phonetic features changes at once" (299). According to Labov, it is, therefore, necessary to recognize a "hierarchy of features depending on the number of phonetic features involved in their realization," i.e., "a hierarchy of abstractness" (ibid.). Thus, changes ranking high on this hierarchy, i.e., involving changes in numerous features at once, usually follow the path of lexical diffusion, whereas changes near the bottom of the hierarchy, involving changes in fewer features, proceed with Neogrammarian regularity. In the case of consonants, lexical diffusion can be noted among changes involving the place of articulation (302).

Although many subsequent studies have also shown Wang's proposal with regard to the lexical diffusion of some sound changes to be in general correct, several specific points of his model were challenged. Particularly controversial was Wang's alleged claim that a given change spreads through the lexicon on a more or less random basis, being influenced at most perhaps by word frequency, but not subject to any phonetic or grammatical conditioning.[2] This aspect of the lexical diffusion hypothesis was criticized by Householder (1972, 1983), who stated (1972: 2) that although it may very well be "that individual words change at the beginning," however, "once the number increases ... a rule must appear, generalizing the change to all words satisfying the conditions of the rule ... and lightening the speaker's burden thereby." Moreover, Priestly (1986), in his study of one sound change in the Sele dialect of Carinthian Slovene, found that although his data did not point to any phonetic and grammatical considerations as playing a role in the spread of sound change on a word-to-word basis, the meaning of the word (in Priestly's case, it was the meaning of a word in the second, not even the native language) did apparently inhibit the spread of the change (339).

Priestly's study demonstrated the need for still another modification of Wang's model of lexical diffusion. In describing the four logical possibilities for the spread of sound change, Wang (241) pointed out that the lexical diffusion hypothesis accords both with possibility (2) (phonetically abrupt and lexically gradual) and with possibility (4) (phonetically gradual and lexically gradual), of which, however, the former "is the more compelling." Priestly, working with a Slavic language, also found a sound change progressing gradually through the lexicon. However, the change observed by Priestly was, as he stated (340), phonetically "neither 'gradual' ... nor 'abrupt'," but "rather ... somewhere in between." Since it involved a change in the place of articulation, its diffusion through the lexicon gradually was not surprising (see Labov's above-mentioned prediction in this regard). However, on the phonetic level the change did not reflect either possibility (2) or possibility (4), but admitted instead "possible intermediate pronunciations."

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[2] Such is the interpretation given in Labov 1981:279. We interpret Wang as somewhat more flexible on this point, perhaps even a bit baffled as to the causes behind the progression of sound change, as the following remark (253) shows: "We refrain at this point from speculating on certain fascinating questions: why some morphemes change earlier than others, whether morphemes follow the same change schedule from speaker to speaker, and how speakers influence each other's change schedules. These questions are probably in large part insoluble on the basis of purely linguistic considerations, since they appear to depend on many social factors."

Still a different route for the spread of sound change was suggested by Janson in 1983. We refer once again to Wang's four possibilities for the spread of sound change. Wang (241) rejected the first possibility (phonetically abrupt and lexically abrupt) "by elementary observations," since, as he said, it "implies that all morphemes with only *X*-pronunciations for a given speaker should suddenly have only *Y*-pronunciations, which is obviously unacceptable." As he argued, a "sound change takes time, not only for the collective vocabulary of a speech community, but for the vocabulary of individuals as well." In Janson's view, the rejection by Wang of phonetically and lexically abrupt change (affecting all the sounds and words simultaneously) was too hasty (20). Janson provided evidence that such changes do indeed exist, for example, the change from apical to uvular /r/ noted in Western Europe. The studies documenting the spread of this change, which Janson cites (21 ff.), support the claim of a phonetically and lexically abrupt change in individual speakers. However, when the entire linguistic community (described in a given study) is taken into account, the spread of the change is seen to be generationally stratified, with the older generation using consistently one variant and the younger generation using the other one (cf. the study by Király mentioned in chapter 1, where the generationally distinct use of pleophonic forms in the Hungarian village Abaújszolnok is probably also an example of such a type of change). Thus, commenting on this type of change, Janson concludes that "there is no lexical diffusion here" and the "only gradualness is connected with the age of the speakers" (21).

With regard to the question of implementation of this type of change within the community Janson proposes a model which involves variation not only in the speakers' norm, but also in the norm of the listeners. (It must be added that all proposals as to the implementation of sound change mentioned in this discussion include the concept of variation. This, of course, has been one of the foundations of the theory proposed by WLH, who stated that "all change involves variability and heterogeneity" (1968:188), and that "while linguistic change is in progress, an archaic and an innovating form coexist within the grammar" (149), which has as its result that "change is more regular in the outcome than in process" (150). Wang's lexical diffusion model also presumes the existence of "doublets" which fluctuate "either randomly or according to some such factor as tempo style" (1969:242). However, all of these models implicitly refer only to the speech norm, making no specific reference to the listener.) Janson (24) contends that "a crucial aspect of the implementation of sound change is speech perception in its relation to speech production." From this vantage point, Janson proposes that a sound change proceeds minimally through five stages from its initiation to its completion. She takes as her example the implementation of the change from apical to uvular /r/ and proposes the following model (24):

STAGE	PERCEPTION	PRODUCTION
1	r	r
2	r ~ R	r
3	r ~ R	r ~ R
4	r ~ R	R
5	R	R

Janson's model incorporates the obvious fact that "much more variation occurs in the total amount of speech which a single individual hears than in the speech which he produces himself" (25). This is reflected at stages 2 and 4. Imitation of a new feature takes place at stage 3, which signals a change in speech habit, and, according to Janson, must imply a change in the speaker's norm. Stage 4, when only the new forms are produced, although both old and new are still perceived, signals a change in the linguistic system (26):

> It can now be seen that what happens in a discrete sound change is that both the linguistic norm and the internalized linguistic system change - but these changes are not simultaneous. The first significant event is that a person's norm is altered; this will usually entail only peripheral adjustments in the internal linguistic

> system. But new learners of the language will draw the full conclusions from the norm change, and will construct their internal linguistic system accordingly. Thus the norm changes first, and the internal grammar follows suit.

The above statement seems to imply that stage 3 (with variants existing in production and tolerated in perception) is crucial in the propagation of sound change from speaker to speaker, since it entails both a change of norm for the speaker, and at the same time provides the input for other speakers to become attuned to the new variant accepting it in their own perception (to be carried into production at some later point in time). Stage 3, therefore, provides the opportunity to "recycle" the change. (Householder (1983: 6) concurs as to the importance in linguistic change of just such a stage.)

It will be remembered that Janson's model applies to changes implemented not via lexical diffusion, but rather with Neogrammarian regularity. As such, the production side of stage 3 in her model must necessarily describe the situation in the linguistic community, not that of any one individual (since for the individual only one variant has become the norm). We feel, however, that this very model must be equally applicable in describing the route of lexical diffusion of a change. On such a reading, the aforementioned modification at stage 3 would not be necessary, as lexical diffusion inevitably must admit the existence of forms with both pronunciations within the individual's norm.

The previous discussion has focused on the question of how sound change is implemented within the linguistic system. We have found support for both the regularity of sound change, as well as for its gradual implementation through the lexicon, and have seen that variation is an essential ingredient of change. Variation manifests itself in speech production. But the only guarantee of the advancement of sound change is the tolerance of variation in speech perception. Without this, change would be impossible, since any new variant, unrecognizable or unacceptable to the listeners, would have no chance of ever being repeated again by new speakers, and would eventually disappear.

Implementation of linguistic change through the social matrix

We have looked at proposals with regard to the spread of linguistic change through the linguistic system. But this, of course, is only one side of the coin. Change is spread through the speech of language users, members of intricate social networks, who unconsciously, and sometimes perhaps even consciously, determine its fate. Just how and why the change is passed on from speaker to speaker is itself largely a function of a given speaker's place and role within the society of which he is a member. Numerous studies carried out within the Labovian model enrich our understanding of the path taken by linguistic change on its way through the social matrix. We turn briefly to these now.

In his pioneering study of vowel change in the centralized diphthongs /ay/ and /aw/ on Martha's Vineyard, followed by the study of the use of postvocalic [r] in New York City, Labov convincingly demonstrated the existence of a correlation between social patterns within a given community, on the one hand, and the distributional pattern of the linguistic variables, on the other. On Martha's Vineyard, for example, Labov (1972a) found that a patterned distribution of the variables correlated not only with the age of his informants, but also with their place of residence on the island (Martha's Vineyard can be divided into two parts with distinct settlement patterns) and their occupation (the island's fishermen no doubt became part of linguistic history as a result of Labov's study). Differences in the distribution of the variables could also be correlated with the ethnic origin of the island's inhabitants (whether English, Portuguese or Indian). In the urban environment of New York City, on the other hand, Labov (1972b:44) found the linguistic variable (r) to be a "social differentiator in all levels of New York City speech" correlated foremost with the economic class of the speaker (whether working, lower, lower-middle or upper-middle), and also with the speaker's age. The interesting aspect of the situation in New York City proved to be that the differential use of (r) correlated not only with gross social differences in that city, but also reflected very fine social differences, such as among representatives of a single occupational group (sales personnel) employed in three large department stores, which were stratified according to their prestige. In his synthetical work "Building on Empirical Foundations" Labov (1982:76) enumerated "five dimensions of social structure" which various sociolinguistic studies showed to be relevant to linguistic change, namely, "social class or status, race or ethnicity, age, gender, and locality."

It goes perhaps without saying that one should not expect to find all of the five "dimensions of social structure" playing an important role (or even present) in any one given social context. Priestly (1986), for example, established that the sound change /w/ → /h/ and /j/ →/h/, which he observed in the Sele dialect of Carinthian Slovene, was spreading generationally and geographically, i.e., the change in progress correlated both with the age of the informants, as well as with their place of longest residence in the village (Priestly (334) found it important to distinguish between "place of birth" and "place of residence" of the speakers). Other sociolinguistic factors, if present, were not reflected in the distributional patterning of the change. On the other hand, Dorian (1976, 1978), working, as Priestly, in a language contact area, but describing not a healthy development of language, but rather its decay, was able to correlate the observed changes in Scottish Gaelic with only one of the five "dimensions," namely, the dimension of age. However, she found that the progression of change through the community correlated with an altogether different dimension reflecting the speaker's integration within the social matrix - the level of the speaker's fluency in the language. Thus Dorian described her informants along a proficiency continuum, on the very bottom of which she placed a group of "semi-speakers," who, as she explained (1976:97), "can make themselves understood in Gaelic, but who speak a very imperfect version of the language."

The conclusion of this must, therefore, be that the five "dimensions of social structure," mentioned by Labov, are not automatically completely generalizable from one linguistic community to the next, but rather that a detailed knowledge of the social structure of each community must be gained in order to establish those "dimensions" which are relevant to it. There is still a further caveat with regard to the embedding of linguistic change within the social structure, which perhaps is worth noting. It was expressed as early as 1968 by WLH (185):

> In the development of language change, we find linguistic structures embedded unevenly in the social structure; and in the earliest and latest stages of a change, there may be very little correlation with social factors.

The problem of the transition of change from speaker to speaker was touched upon briefly in the section dealing with the implementation of change through the linguistic structure, when we discussed Janson's model embracing the dual role of the language user - as speaker and as listener. We mentioned then the crucial role of Janson's stage 3 in the propagation of linguistic change. WLH (184) summarize the transition of change in the following way:

> ...transition or transfer of features from one speaker to another appears to take place through the medium of bidialectal speakers, or more generally, speakers with heterogeneous systems characterized by orderly differentiation. Change takes place (1) as a speaker learns an alternate form, (2) during the time that the two forms exist in contact within his competence, and (3) when one of the forms becomes obsolete.

This proposal agrees in general with Janson's model, without making specific, however, the distinction between language users as speakers, on the one hand, and as listeners, on the other. And since the listener, as Ohala (1981) has demonstrated, does indeed have an active role in determining the fate of sound change, a model of linguistic change should necessarily include him. This we feel to be the advantage of the more explicit model proposed by Janson.

Explaining linguistic change

Whereas the above discussion touched upon the problems of the embedding and the transition of sound change, it did not address the question of a possible explanation of linguistic change and the mechanisms of its transmission through the social structure. Such explanations were of course proposed by Labov both in the case of his study of change on Martha's Vineyard, as well as in his study of change in New York City. The findings of the studies carried out in both places provided Labov (1972d) with the basis for proposing a detailed outline of the "mechanism" of sound change. Labov's outline consists of two parts, the second of which (stages 9 - 13) describes what he termed as "change from above," dealing with "the overt process of social correction applied to individual linguistic forms" (Labov 1972c:123). Since this type of change may be more applicable to the final stages of a linguistic change, and, moreover, since it entails a speech community with clearly defined status groups, where the lower groups emulate the "prestige model" of the highest group, it seems to be less relevant to our study of change in the Rusyn community, where such groupings (particularly those defined along socio-economic lines) are not readily apparent. We reproduce, therefore, only the first part of Labov's outline of the mechanism of sound change (1972d:178-179):

> 1. The sound change usually originated with a restricted subgroup of the speech community, at a time when the separate identity of this group had been weakened by internal or external pressures. The linguistic form which began to shift was often a marker of regional status with an irregular distribution within the community. At this stage, the form is an undefined linguistic variable.
> 2. The changes began as generalizations of the linguistic form to all members of the subgroup; we may refer to this stage as *change from below*, that is, below the level of social awareness... The linguistic variable is an *indicator*, defined as a function of group membership.
> 3. Succeeding generations of speakers within the same subgroup, responding to the same social pressures, carried the linguistic variable further along the process of change, beyond the model set by their parents. We may refer to this stage as *hypercorrection from below*. The variable is now defined as a function of group membership and age level.
> 4. To the extent that the values of the original subgroup were adopted by other groups in the speech community, the sound change with its associated value of group membership spread to these adopting groups...
> 5. The limits of the spread of the sound change were the limits of the speech community, defined as a group with a common set of normative values in regard to language.
> 6. As the sound change with its associated values reached the limits of its expansion, the linguistic variable bacame one of the norms which defined the speech community... The variable is now a *marker* ...
> 7. The movement of the linguistic variable within the linguistic system always led to readjustments in the distribution of other elements within phonological space.
> 8. The structural readjustments led to further sound changes which were associated with the original change. However, other subgroups which entered the speech community in the interim adopted the older sound change as a part of the community norms, and treated the newer sound change as stage 1. This *recycling* stage appears to be the primary source for the continual origination of new changes... (*ital.* in orig.)

Labov's studies have enabled him to provide also a general portrait of the initiators of a linguistic change, i.e., of the "restricted subgroup of the speech community" which was mentioned at stage 1. Omitting his proposals relating to the socio-economic class of such individuals (since, as mentioned earlier, the socio-economic factor is seemingly not very important in the Rusyn case), we turn to the other side of the portrait sketched by Labov. The innovators of sound change, according to Labov (1982:78), "are usually people with the highest local status, who play a central role in community affairs." Further discrimination among those with comparable status leads Labov (1980:261-262) to a still finer description of the innovators:

> The most advanced speakers are the persons with the largest number of local contacts within the neighborhood, yet who have at the same time the highest proportion of their acquaintances outside the neighborhood. Thus we have a portrait of individuals with the highest local prestige who are responsive to a somewhat broader form of prestige at the next larger level of social communication.

Having presented such a portrait of the initiators of sound change Labov turns to the question of the function of language reflected in these sound changes. Clearly this function goes beyond the mere "communication of referential information." Instead, as Labov (262) stresses, we are "dealing with the emblematic function of phonetic differentiation: the identification of a particular way of speaking with the norm of a local community." It is worth pointing out that this very function of language may be seen to play an important role not only in situations of normal language development, but also in those dealing with language "death". Dorian (1978:608), for example, attributes the resistance to "large-scale morphological simplification" evident in East Sutherland Scottish Gaelic to the "integrative" rather than "instrumental" role of this language, which, although no longer serving any economic purpose for its speakers, nonetheless "is emblematic of membership in a particular subgroup in the population."

One further group plays a significant role in the propagation of a sound change, namely, women who, according to Labov (1982:78), with respect to linguistic changes, "are in advance of men, usually to the extent of a generation." The important role of women as innovators in linguistic change was noted earlier by Trudgill (1972) in his survey of the urban British English dialect of Norwich. According to Trudgill, women are more status-conscious than men, and, therefore, tend to produce linguistic forms "which more closely approach those of the standard language or have higher prestige than those produced by men" (180). Dorian's observations in the domain of language death (1978) also point to the important role of women. In the case of Scottish Gaelic, however, women contribute to the preservation of the language.

Several other points in Labov's outline of the mechanism of sound change deserve our attention. The first pertains to stage 1 again, and clearly touches on the problem of the actuation of sound change, "the most recalcitrant of all the issues" considered (Labov 1982:81). According to Labov's outline, a sound change is activated "when the separate identity" of the "restricted subgroup" has been "weakened by internal or external pressures." On Martha's Vineyard (Labov 1972a:28-29), for example, the "weakening" of the position of the fishermen has occurred as a result of the incursions of "the summer people." Their ever-growing encroachment has, in turn, reinforced among the Vineyarders feelings of strong ties to the island and a desire to preserve their identity. Hence, the "weakening" of the social position of the fishermen, the most staunchly independent group on the island, has led to a "strengthening" of their linguistic awareness and behavior - as evidenced by the remark of one of them as to the type of English they speak: "it's almost a separate language within the English language." In such a situation, according to Labov, "it is not unnatural . . . to find phonetic differences becoming stronger and stronger as the group fights to maintain its identity."

One can easily imagine that areas of active language contact might also create situations leading to the weakening not only of specific subgroups of linguistic communities, but of entire linguistic communities, as well. Language change is well documented in such areas, even if not necessarily attributed to a weakened position of a social group. Priestly (1986:340), for example, speculates,that the sound change he observed in Sele may have been spurred by the post-WWII population movements and dialect mixture in the area, forcing "more and more speakers . . . to enlarge their linguistic competence." Under such circumstances, "accelerated rates of linguistic change are surely to be expected."

Labov's observation with respect to the linguistic form which begins to shift is also interesting. He refers to it as often being "a marker of regional status with an irregular distribution within the community." Carrying this observation into a language contact area, one may perhaps speculate that the linguistic form being subject to change might be a marker of the unique status of the entire language, differentiating it from the other language(s) in the area.

At stage 3 of Labov's outline the process of sound change is taken further along its path by a new group of speakers resorting to the mechanism of hypercorrection. Labov's observations both on Martha's Vineyard and in New York City have led him to conclude (1972c:141) that the mechanism of hypercorrection, itself borne of social pressures, serves as a "means by which the process [of change] can be brought to an entirely different tempo." Thus hypercorrection contributes to the acceleration of linguistic change.

In situations of language contact, linguistic change is often seen to be the result of the process of simplification. (Both hypercorrection and simplification may be viewed as two sides of the same coin of overgeneralization. But whereas the former leads to an increase in differentiation within the linguistic system, the latter results in its decrease.) This simplification is frequently interpreted as the result of the dominant language exerting an influence (direct or indirect) on the non-dominant language. Several recent studies of languages in contact, however, provide evidence that such an explanation may itself be an over-simplification of the problem, and stress that the observed "simplifications" may be due to a "conspiracy" of causes, among them the "natural evolution" of the language. Such is the conclusion, for example, reached by Priestly (1988) in his study of numerous grammatical changes in Sele. One of the more frequent examples of simplification, "morphophonemic fading," is also evident in Sele. But, as argued by Priestly (70 ff.), it may be due not only to "uneven bilingualism" of the speakers (hence, to indirect German influence), but also to a combination of "natural evolution" of the language and "dialect mixture." Silva-Corvalán (1986), in her study of a syntactic/semantic change in Los Angeles Spanish, also finds evidence of simplification. But whereas she readily agrees that language contact has accelerated the change, the change itself, as she says, may be internally motivated, and therefore "direct influence from English - though possible - is difficult to identify" (604).

Not only the causes, but also the intensity of the process of simplification in language contact situations have recently been called into question. Dorian (1976, 1978) has demonstrated that even in situations of language death simplification is evident to a much lesser degree than may be expected. The answer to this enigma may be found (somewhat ironically) in the dominant language itself, where the presence of "parallel phenomena" (parallel grammatical categories) have the effect of slowing down the disappearance of equivalent categories in the "dying" language, thereby contributing to their longer preservation.

Priestly (1988:66-67) accurately captures the complexity of explaining linguistic change in a language contact situation:

> On the one hand, a development that renders the non-dominant language more like the dominant one may not necessarily have come about because of the influence of the latter; and, on the other hand, a linguistic change that appears to be a typical example of independent 'simplification' may in fact result (at least in part) from the influence of the dominant language and thus not be totally independent. (paren. in orig.)

In the above section we have considered possible explanations of linguistic change and have looked at the mechanisms operative during such change both as proposed for monolingual communities by Labov, as well as for bilingual and multilingual communities proposed by other linguists working within the sociolinguistic model.

Our entire discussion of the Labovian model of sound change has necessarily concentrated only on certain aspects of this model. Some aspects of the model we mentioned only briefly (e.g. the constraints problem), others we omitted altogether (e.g. the "variable rule" as a tool of analysis). We have done this consciously, in order to highlight those aspects of the sociolinguistic model which we felt to be most relevant to our study of morphophonemic change and variation in Rusyn. We examine now the model of morphology developed by Joan Bybee, which will permit us to anchor the "orderly heterogeneity" of language, revealed within the Labovian framework, in a safe linguistic haven, characterized both by firm structure and by immense flexibility.

An analogical model of morphology

Rules vs. representations

Joan Bybee's model of morphology (1985) has been rightfully perceived as falling outside American mainstream linguistics (structuralist and generativist) and, in fact, posing a direct challenge to it (Aronoff 1987). There are several reasons for this. Whereas the mainstream, according to Aronoff (op.cit.:116), "is the descriptive tradition . . . whose central theoretical concern is the justification of particular kinds of grammatical descriptions," Bybee, in her own words (1985: 3) does not attempt to propose "a descriptive model of morphology," but sets forth "certain principles . . . whose goal is to explain the recurrent properties of morphological systems . . . in terms of the general cognitive and psychological characteristics of human language users." To achieve this Bybee relies on a variety of sources - cross-linguistic, diachronic, acquisitional, experimental. Thus, in contrast to the rationalist approach dominant in American mainstream linguistics, Bybee's approach is much more empirically oriented (cf. Hammond and Noonan 1988 for several other points of differentiation along these same lines).

Bybee's view of morphology diverges from the structuralist and generativist positions in still another way, no doubt, shaped by her empiricist orientation. In most current models of morphology, rules and representations are postulated as belonging to separate components, such that the "representations are static and fixed . . . while the rules are the 'moving parts,' the dynamic, the general statements that range over the representations" (Bybee 1988:119). Bybee challenges this position. She rejects the major premise of such models, which as she points out (123) "has gone completely unquestioned for decades," namely, "that rules and representations are discrete and distinct elements of the grammar." She views this as an "unnatural dichotomy," and proposes instead "that the best exemplar of a rule and the best exemplar of a representation are two poles of a continuum" (121). Thus there are morphological and morphophonemic rules that are "extremely productive and general," there are the "semiproductive" rules, "minor rules," there are those "dealing with admitted irregularities," and finally those dealing with suppletion, which "are nothing more than representations" (123). Rejecting the rules vs. representation dichotomy, Bybee focuses instead directly on the lexicon, the locus of representations, and approaches rules "as generalizations that arise from representations" (119). Her model does not view the lexicon and the morphological component as separate compartments of the grammar, but rather includes only a lexicon, in which, as she explains (125):

> The morphological facts of natural language are described in terms of independently necessary mechanisms of lexical storage: the ability to form networks among stored elements of knowledge and the ability to register the frequency of individual items and patterns.

The two mechanisms of lexical storage involved in the above-mentioned processes are, in Bybee's terminology, the "lexical connections" formed among the representations in the lexicon, and the "lexical strength" of these representations.

Thus, in contrast to rule-based theories of morphology, Bybee's model emerges from an analogy-based theory. (Her view of rules "as generalizations that arise from representations" is fully compatible with an analogy-based theory, as discussed by Derwing and Skousen 1989: 6.) That analogy-based theories of language may be much more "psychologically real" than the rule-based approach, and, therefore, deserving "of a much more careful hearing by linguists than has been afforded in recent years" has been persuasively argued for by Derwing and Skousen (op.cit.; see also Derwing 1990 and

Skousen 1989). In addition to providing a systematic comparison between the rule-based and the analogical approaches, Derwing and Skousen (1989) review psycholinguistic evidence as to "the nature of the lexicon and the place of morphology in it" (51) and come to the conclusion that, whereas there exists "quite considerable evidence in favor of a massive word-store network," there is a "total absence of evidence for anything like the generative notion of the morpheme-invariant underlying form" (52). Clearly, then, an analogy-based model outweighs a rule-based one, in that it is capable of better representing "the general cognitive and psychological characteristics of human language users" - a goal set forth by Bybee (1985: 3). Another distinct advantage of analogical models, as pointed out by Derwing and Skousen (9), is that such models are better equipped to represent "speaker variability." One of the reasons for this, according to Derwing (pers. communication), is that analogy-based models allow for multiple sources of productivity.

Of course, the notion of analogy in linguistics is not new, even if the formalization of this notion has been sorely lacking (cf. Derwing and Skousen, op.cit.: 8 on this point). Bybee herself acknowledges the influence of earlier linguists on her work, most notably that of two Polish scholars, J. Kuryłowicz and W. Mańczak. We will, however, bypass the foundational work of these two linguists in the area of analogy, as it has been adequately summarized in numerous sources (e.g. Hock 1988:210 ff., Lehmann 1973:198 ff.), and proceed directly to an overview of Bybee's model of morphology, as elaborated most fully in her 1985 monograph *Morphology: A Study of the Relation between Meaning and Form*, made somewhat more explicit in her 1988 article, but heralded, of course, in earlier studies.

The organization of paradigms

In Bybee's model (1985:50) a paradigm is seen as possessing internal structure, such that "there are relations among words that are not symmetrical, and some relations are stronger than others." It is often the case that the semantic relations among the forms in a paradigm are mirrored by the existing morphophonemic alternations. Thus, as we had occasion to mention in Chapter Two, in Bybee's model of morphology these alternations are seen as not being arbitrary. On the contrary, as she points out (6), morphophonemic alternations "diagram two aspects of the organization of paradigms": the "basic-derived" relationship among the forms in a paradigm (e.g. the singular vs. other numbers, the present vs. other tenses, the third person vs. other persons), and the "degree of relatedness" among these forms (e.g. two verb forms that differ only by person but agree in tense, aspect, and mood are seen as being more "related" than two verb forms of the same person but differing either in tense, aspect, or mood).

The "basic-derived" relationship is, in Bybee's words (52), "a very strong relation among forms of a paradigm." As she demonstrates in several of her studies, this relationship is operative in language diachrony (Bybee and Brewer (B & B) 1980), where the "basic" form often serves as the model in the restructuring of paradigms, and it is evident also in child language acquisition (Bybee Hooper 1979), where the "basic" forms tend to be acquired earlier and often exert an influence on forms which are acquired later.

In Bybee's model (B & B 1980:214 ff.) two factors influence the basic-derived relationship, and hence determine the choice of the base form in a paradigm. The primary influence emerges from morphological categories, such as tense, number, person, which "establish the axes upon which such relationships stand." Bybee follows the traditional view on markedness here, taking the "unmarked" form as the more basic one, and the "marked" form as the derived one. According to this view then, the present tense is more basic than the past tense, in the category of number the singular is basic, while the plural derived, and with respect to person (in verbal paradigms) the third singular is the most basic form. (We have already mentioned in Chapter Two that the lexicon in Bybee's model includes only surface representations.)

The second factor influencing the directionality of the basic-derived relationship is, in Bybee's model, the "degree of autonomy" of a given representation, such that "the more autonomous form serves as the basic form and the less autonomous forms are derived." It is noteworthy to point out, that "autonomy" is a "property of individual words . . . the extent to which a word is likely to be represented in the speaker's lexicon as a whole and separate unit." Moreover, "autonomy" is a gradient notion, formulated in terms of "degrees," allowing "for the possibility that individual speakers may make slightly different decisions concerning lexical storage." By formulating the notion of "autonomy" in terms of "degrees," Bybee's model simultaneously admits more than one autonomous form per paradigm. Thus, in verbal paradigms, for example, in addition to the third singular, the first singular forms also show some degree of autonomy.

Three factors determine the degree of autononomy of any given word. These, according to Bybee (B & B 1980:215), are the word's "semantic simplicity, frequency, and morphophonemic irregularity." We note some weaknesses in Bybee's definition of these three factors.

With regard to "semantic simplicity," for example, she invokes notions from the theory of markedness to state (1985:57) that "a semantically basic or unmarked word is likely to have a separate lexical entry." This we see as a somewhat circular definition, since it is ultimately being used to define the "basic" form in a paradigm: it is "basic" if it is "autonomous," and it is "autonomous" if it is "semantically basic." Earlier (B & B 1980:215) a somewhat more satisfactory definition of "semantic simplicity" is provided where this notion is applicable to "words with fewer semantic components." Moreover, as Bybee (1985:57) points out, "it happens that for the most part the same forms that are identified as being unmarked or basic are also the most frequent." So semantic basicness and frequency often converge.

Bybee's proposal of "morphophonemic irregularity" as an independent factor in influencing the autonomy of a representation fares, in our estimation, not much better than that of "semantic simplicity." She states (1985:58): "If a word is so irregular that it cannot be derived from any other related words, even if it is semantically marked, it will have to be autonomous." But, "only very frequent paradigms can tolerate high degrees of morphophonemic irregularity." Thus morphophonemic irregularity is, at least partially, dependent upon the factor of frequency. So it is, in fact, frequency that is the only independent and, as Bybee herself admits, the most important determinant of "autonomy." To return, for example, briefly to the first and third singular forms in a verbal paradigm, the first singular often retains morphophonemic irregularity as does the expected "basic" third singular. Bybee points out that this is not surprising, since first singular forms are almost as frequent as third singular forms, and their resistance to change "is a consequence of their autonomy" (57). Thus, preservation of morphophonemic irregularity converges with the frequency of the forms.

The above example makes a further point about Bybee's model, namely, that the two notions "autonomy" and "basic" are independent. Whereas the first singular may be an autonomous form in some paradigms, and thus have its own representation in the lexicon, it does not usually serve as the model during paradigm restructuring. This role is performed by the third singular, which is therefore, the most autonomous form in the paradigm, and the most basic one.

We have discussed the organization of paradigms in Bybee's model with respect to the basic-derived relationship. This relationship, to restate briefly, is influenced by the hierarchical structure of morphological categories, on the one hand, and the degree of autonomy of a form, on the other. The autonomy of a form, which secures it an independent representation in the lexicon, i.e., a representation not connected to other representations, is itself the result primarily of the form's frequency, but also its low semantic complexity and morphophonemic irregularity.

Morphophonemic alternations point to still another organizational aspect of paradigms, namely, the "degree of relatedness" among forms. This relationship is also measured in degrees, and, as Bybee (1988:129) explains, it "is determined by the number of phonological and semantic" features shared between pairs of words. Thus the relations between words are reinforced the more phonological and semantic features they have in common. That "degree of relatedness" is indeed a viable aspect of the organization of paradigms is borne out, as demonstrated by Bybee (1985: 64), during morphophonemic changes:

> ... morpho-phonemic changes tend to be of a very specific type: they tend to eliminate alternations among closely related forms. Thus the more closely related two forms are, the more likely that an alternation between them will be eliminated.

Bybee provides numerous examples of such changes within paradigms. All of them adhere to the hierarchy of morphological categories, referred to earlier. Thus, for example, whereas morphophonemic alternations might be eliminated within a single tense in a verbal paradigm, such leveling is less likely to occur across tenses. In Bybee's words (65):

> ...since the person/number forms of a tense are more closely related to one another than they are to forms in other tenses, it is predicted that the loss of a stem alternation will be more likely among the person/number forms of a single tense, than among forms that span more than one tense.

Carrying this argumentation over to nominal paradigms, one would predict that morphophonemic alternations might be eliminated among forms of the same number, but preserved across the numbers, i.e., between the singular and the plural, for example. Such is indeed the case in many Slavic languages (Stankiewicz 1960:186). We might, moreover, hypothesize that this type of relationship among forms in a paradigm may play a role not only in the elimination of morphophonemic alternations, but also in their introduction. This hypothesis finds support in some casual observations we made while collecting data for our study of morphophonemic variation and change in Rusyn, and we will return to it in the final chapter.

Further evidence for the viability in the organizational structure of the lexicon of the "degree of relatedness" among representations, based on their phonological and semantic similarity, comes from psycholinguistic experiments. Studies carried out by Derwing and Baker (1977, 1979), for example, demonstrate that in morpheme recognition tests speakers do indeed rely on semantic and phonetic features in ranking pairs of words. These studies show, furthermore, that although mature subjects use both the semantic and the phonetic dimensions in assessing the relatedness between pairs of morphemes, the semantic dimension is clearly the more important one.

Local markedness

Our discussion of the organization of paradigms in Bybee's model of morphology might seem to indicate that the last word on this subject has been spoken and that the described structure is generalizable to all paradigms. Such comfortable thoughts were dispelled, however, by several observations made by Tiersma (1982), which could not go unnoticed. Tiersma described numerous cases in several languages where, contrary to the predictions of the theory of markedness (and thus contrary to the basic-derived relationship of Bybee's model), the derived or marked form of a paradigm serves as the basis for the restructuring of other forms.

In Frisian, for example, Tiersma found instances of leveling in the noun paradigm where the diphthong of the plural form is generalized to the singular, in contrast to the more widespread and expected pattern which proceeds from the singular to the plural. Tiersma observed (834) that the seemingly random exceptions are actually very systematic when "real-world considerations" are taken into account, since all of the exceptions refer to items "which naturally occur in pairs or groups . . . and are often referred to collectively."

Examples of this type, "where semantic or . . . real-world considerations in a certain well-defined set of lexical items produce exceptions to the general markedness conventions," Tiersma proposed to call "locally marked," i.e., adhering to principles of "local markedness." Thus the anomalous behavior of the nouns in Frisian could be explained by the theory of local markedness. Tiersma proposed the following principle which such nouns are seen to obey (835): "When the referent of a noun naturally occurs in pairs or groups, and/or when it is generally referred to collectively, such a noun is locally unmarked in the plural." Consequently, any linguistic change in these nouns might be expected to favor the plural. (Priestly (1984) notes several examples of "local markedness" in the Sele dialect of Slovene. The theory is seen as applicable in a somewhat broadened situation, since in the Sele dialect, in addition to the singular and plural, also the dual number exists.)

In his study Tiersma mentioned two more conditions under which certain classes of words may be locally unmarked. One of these, dealing also with the noun paradigm, is directly relatable to our data on morphophonemic alternations in Rusyn (843):

> In languages with case systems, nouns referring to places are locally unmarked in the locative (or another local) case, and nouns referring to tools or instruments are locally unmarked in the instrumental.

We will have occasion to discuss this principle of local markedness in the chapter dealing with the "dental palatalization" in Rusyn, as this morphophonemic alternation occurs in the locative singular and our data includes a number of nouns "referring to places."

Tiersma's study ends with the observation that "local markedness is a matter of degree rather than an absolute," thus "it is not true that a particular class of words MUST show the effects of local markedness, but rather that it MAY do so" (847). Furthermore, by demonstrating that the "reference of a word may be relevant to the order in which allomorphs are acquired, and hence for the direction of paradigmatic leveling," the theory of local markedness has important consequences for any theory of morphophonemic change (847-848):

> ...any theory which attempts to account for the leveling of alternations primarily as changes in the grammar - or which tries to predict the direction of leveling by grammar-internal means, without reference to the meaning and usage of the words involved - is bound to be inadequate.

We have seen that within Bybee's model of morphology semantic considerations do indeed play an important role, and, as will become evident further on in our discussion, her model is flexible and dynamic enough to accommodate paradigms which conform to the proposed basic-derived structure, as well as those whose organization is influenced by principles of local markedness. How this is accomplished in Bybee's model is the topic which we address next.

A dynamic model of the lexicon

The concepts discussed earlier in this chapter in connection with the organization of paradigms, namely, the basic-derived relationship, the degree of autonomy and the degree of relatedness of forms, make certain predictions not only with regard to language change, or the acquisition of language by children, but foremost about lexical storage, i.e., about the structure of the lexicon, and about the processing of words.

There is a good deal of experimental evidence available to support the claim that suppletive and other irregular forms are stored in the lexicon as whole units, and retrieved without analysis, i.e., as unsegmented entities (cf. the experimental data presented by Stemberger and MacWhinney (1986a), for example). The learning of such words must necessarily be accomplished by rote, rather than rule. The structure of the lexicon as concerns such words is relatively straightforward. The evidence with regard to the storage and retrieval of regularly inflected forms, on the other hand, requires a more differentiated model of the lexicon. The ingenious experiments carried out by Stemberger and MacWhinney (1986b, 1988), for example, indicate that some regularly-inflected forms are also stored in the lexicon. These are the highly frequent regular forms. The low frequency regularly inflected forms seem, in general, not to have separate storage in the lexicon, being produced instead via rules. Moreover, with regard to the storage of highly frequent regular forms, Stemberger and MacWhinney (1986b) show that these forms, although stored, are at the same time given analysis in the lexicon, i.e., are subject to some rule-like generalizations.

The findings of Stemberger and MacWhinney highlight not only the importance of frequency in any model of the lexicon, but simultaneously suggest two constraints on how lexical frequency should be encoded (24):

> First, lexical frequency must be encoded in such a way as to affect not only the access of the lexical item itself, but also the access of the parts of the lexical item. Second, frequency must be at least partially encoded in terms of "strength" (e.g.,

> degree of activation[3]) . . . High-frequency items have higher activation levels and pass more activation to their component phonemes and morphemes than do low-frequency items. Higher activation levels protect an item from error. (paren. in orig.)

The conclusions reached by Stemberger and MacWhinney and their specifications with regard to the encoding of lexical frequency are, we feel, perfectly compatible with Bybee's model of the lexicon, which incorporates two principles seemingly tailor-made to handle the requirements prescribed. (The revelation of Stemberger and MacWhinney's apparent adherence to the framework of lexical phonology (1988:113) comes, therefore, as somewhat of a surprise.)

The first principle of Bybee's dynamic model of lexical representation is that of "lexical strength" (1985:117):

> Lexical strength is a way of modeling the notion of *autonomy* . . . If we metaphorically suppose that a word can be written into the lexicon, then each time a word in processing is mapped onto its lexical representation it is as though the representation was traced over again, etching it with deeper and darker lines each time. Each time a word is heard and produced it leaves a slight trace on the lexicon, it increases in lexical strength. The notion of lexical strength allows us to account for the various effects that frequency has on the behavior of words. (*ital.* in orig.)

In order for successful mapping of items during lexical processing to take place, matching of items must occur based both on phonological and semantic similarity. Lexical strength of items is reinforced even if the "match" is not perfect (ibid): "Given a semantic match, a phonological representation is strengthened to the extent that a matching of a portion of the phonological string is possible." Thus whole words, as well as parts of related words are mapped onto each other strengthening the representation. Lexical strength, in Bybee's model, is then both a gradient and a dynamic notion, and, as she puts it (1988:131), "an index of word frequency."

One of the main effects of frequency which the notion of lexical strength helps to account for is the preservation of irregularity in language (1985:119):

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[3] The authors do not provide a definition of the concept of "activation." Their use of this term, however, suggests a similarity with Bybee's notion of "lexical strength."

> ... the notion of lexical strength models rote-learning, which accounts for the maintenance of irregularity and suppletion in high-frequency forms. Conversely, the proposal that infrequently-used forms fade accounts for the tendency to regularize infrequent irregular forms, for an irregular form that is not sufficiently reinforced will be replaced by a regular formation.

Among the other phenomena which can be accounted for by the notion of lexical strength is local markedness. The "locally marked" form, because of real world considerations, is also the more frequent one in the paradigm. As Bybee points out (122), such a form "will behave as though it is autonomous, and in some cases will even become the basic member of the basic/derived pair." Thus the frequency of the locally marked form, which results in increased lexical strength, simultaneously leads to its greater autonomy.

The principle of lexical strength accounts for the different degrees of autonomy of lexical representations (and, it seems to us, fulfills the constraints on the encoding of lexical frequency defined by Stemberger and MacWhinney on the basis of their experimental evidence). The second principle governing the organization of the lexicon, as described by Bybee (118), is the principle of "lexical connections" which accounts for the "multiple and diverse relationships among words" (cf. pg. 47).

Lexical connection in Bybee's model is also a gradient and dynamic notion. Words can be related by shared semantic features, as well as by phonological similarities, although the semantic connections are primary (ibid):

> The semantic connections are the strongest and the most important in determining the closeness of the relations among words. This can be seen by comparing forms that have a strong semantic connection but no phonological one, such as *go* and *went*, to forms which are phonologically identical, but have no semantic connections, such as the two senses of *crane*. The psychological relation between suppletive forms is quite strong, as demonstrated by innovations such as *goed* for *went*, but the relation between forms that are homophonous usually goes unnoticed, and lexical ambiguity is hardly ever a problem in context.

Thus, in Bybee's model (1988:126), "each lexical word is a pairing of a set of semantic features with a set of phonological features." (The connections between the features of two words are represented in her model by lines of various thicknesses.) If two words are connected by both semantic and phonological features then a "morphological relation" can be established between them. This is the strongest sort of relationship, although it too is measured in degrees depending on the number and nature of semantic features shared, the phonological similarity, and word frequency. With regard to this last factor Bybee remarks (1985:118):

> ...high-frequency words form more distant lexical connections than low-frequency words. In the case of morphologically complex words, this means that high-frequency words undergo less analysis, and are less dependent on their related base words than low-frequency words.

Thus, high-frequency words, which, as we mentioned earlier, have a greater degree of lexical strength and are, therefore, more autonomous, have at the same time weaker connections to other words. Low-frequency words, on the other hand, are less autonomous requiring stronger connections to other words, especially their base word. As pointed out by Aronoff (1987:126), this results in somewhat of a paradox, since low-frequency forms are connected to more autonomous, high-frequency forms, but these, in turn, are only weakly connected to other forms. This paradox can easily be resolved, as Aronoff states, "if we assume that Bybee's notion of lexical connection is asymmetric, making low-frequency forms more dependent on high-frequency ones," than the other way around.

The principle of lexical connection in Bybee's model is invoked to explain not just paradigm-internal relations, but also relations between words that belong to different paradigms. Here we find words that relate to one another on the basis of sharing similar morphological segments, and words that belong to the same morphological class. Words of one morphological class often participate in similar morphophonemic alternations the descriptions of which have usually been formulated as single rules. This has been motivated both by interests of economy, and by the desire to capture linguistic generalizations. But are such generalizations indeed justified? We turn briefly to this topic now.

Morphophonemic alternations across paradigms

We noted earlier that, within Bybee's model, morphophonemic change that takes place on a paradigm-internal basis is motivated by the morphological relations implicit in the paradigm. Morphophonemic change that proceeds along a paradigm-external route, however, is, according to Bybee (1980: 49), motivated in a different way:

> Such changes cannot be based on morphological relations since they have to do with relations between separate lexical items. They could be based on semantic similarities, but they seem most often to refer to phonological properties.

Thus, in cross-paradigmatic morphophonemic change, phonological motivation, according to Bybee, seems to be more important than semantic motivation. In her model of the lexicon words participating in such cross-paradigmatic morphophonemic changes are related through a network of lexical connections. But how strong are these connections, and do they always exist? In other words, is it always the case that such groups of words should be brought together, so to speak, under one roof and described by a single rule?

Bybee (1985:131) states that there are many cases when "lexical connections among paradigms with similar alternations are not justified," since "not all regularities of distribution constitute valid generalizations." She points out, for example, that the most general rules are not always those that are internalized by speakers. This indeed was demonstrated by a nonce-probe experiment with Spanish verbs conducted by Bybee and Pardo (1981): although alternations of back and front vowels in third conjugation Spanish verbs are usually described by a single linguistic rule, the nonce-probe experiment showed that speakers treat these alternations quite independently of one another, thus apparently missing the obvious generalization. On the basis of the experiment Bybee and Pardo, therefore, concluded (946) that "for morphologically-conditioned rules, the simplest and most general rule may not be the psychologically valid rule."

Another indication that lexical connections may not be warranted is, in our view, the existence of exceptions within morphophonemic alternation sets. Such cases may perhaps also point to the fact that speakers do not view the entire alternation set as a single entity, encompassed by a single rule. In attempting to explain the existence of exceptions to morphophonemic alternations, B. Comrie (1979: 51) offers the following hypothesis:

> A given morphophonemic alternation set often includes individual alternations where the phonetic distance between the alternants is greater in some pairs than in others. We hypothesize that, where such a difference in phonetic distance exists, the alternation will be more likely to be lost when the phonetic distance is greater.

Comrie defines "phonetic distance" between two segments "as the number of features (within some overall framework of phonetic features) by which they differ" (51-52). And although Comrie seems to admit that in some situations the measuring of phonetic distance may yield contradictory results (depending on the framework adopted), his hypothesis clearly follows from the view that given a morphophonemic alternation set one should be able to describe it in terms of one rule. He outlines (52-53), for example, lenition in Welsh, where "the set of environments in which Lenition is found does not form a natural class": /p~b/, /t~d/, /k~g/, /b~v/, /d~ð/, /g~Ø/, /m~v/, /ɬ~l/, /hr~r/. Whereas in most of the above cases, according to Comrie, "Lenition involves a change in one feature only... or of two features," in the case of the /g~Ø/ alternation "there is the opposition between presence and (irrecoverable) absence of a segment, i.e., in this last case the phonetic distance between the alternants is greatest." As Comrie points out, "it is precisely here that we find exceptions to Lenition."

Since it may be the case that in some instances phonetic distance between pairs of segments may be difficult to establish with any degree of certainty (as noted above), we propose that Comrie's hypothesis can be tested also under the following circumstances: if within a morphophonemic alternation set there are pairs of morphophonemic alternants that do not vary with respect to phonetic distance, one would not expect to find any differences in "rule behavior" between them. In such a formulation Comrie's hypothesis can be tested against our data on the "dental palatalization" in the locative singular of masculine nouns in Rusyn. We will, therefore, return to this topic in Chapter Seven.

Productivity

In our discussion of Bybee's model of morphology the last topic we address is that of productivity, particularly, how productivity is represented in this model. That indeed it should be represented in a synchronic description of language, and not viewed as "a purely historical artifact," was argued for by Aronoff (1980) on the basis of his well-known experiments with the English nominal suffixes *-ness* and *-ity*. Aronoff demonstrated that native speakers of English, "when asked to judge the acceptability of novel words," are "sensitive to the productivity of the word formation rules which are used to form these words;" therefore, concluded Aronoff, "productivity must be represented in synchronic descriptions of linguistic competence" (81). Derwing and Baker (1977), in their study of both inflectional and derivational constructions in English, in which they extended and improved the techniques employed by J. Berko (1958), conclusively demonstrated that even children are able to extract "a variety of kinds of surface regularities" and employ them productively "in producing novel speech forms" (108). Any dynamic model of language must, therefore, be capable of representing productivity of linguistic processes.

The encoding of productivity in grammar must necessarily be flexible. In the case of phonological processes, for example, as discussed by Holden (1976), productivity is responsive to an intricate hierarchy of relative strength that is evident among the various phonological rules, which themselves are affected by a hierarchy of strength created by segment type and syllable position. The encoding of productivity in morphological processes requires no less flexibility, since it has been shown that productivity draws its strength from numerous sources. Anshen and Aronoff (1981), for example, list the productivity of the suffix as a factor contributing to the productivity of an entire word class. Cutler (1981) argues that the preservation of the transparency of the base word plays an important role in influencing the productivity of several derivational processes. Transparency in her definition is a gradable concept measured on a "transparency continuum" (75). When confronted with neologisms, portions of the base word must be accessed along this continuum for recognition to occur. The "recognition point," as explained by Cutler (76), is both a function of the individual word, as well as "the size of individual speakers' vocabularies," and all this is apt to change when new words are added to the lexicon. Riddle (1985:437), in turn, concludes "that the productivity of lexical elements cannot be satisfactorily discussed without reference to meaning, context and history." Furthermore, referring to experiments employing nonsense words to test the productivity of the derivational suffixes *-ness* and *-ity* in English, Riddle stresses that meaning must be incorporated into the experimental framework. She casts, as she explains (457) "grave doubt on the validity of experiments that do not consider the possibility of a semantic distinction for *-ness* and *-ity* words," since "in the absence of sufficient contexts to force particular readings, experimental subjects must fall back on other criteria to make the relevant choices." We venture to hypothesize that Riddle's stipulation as to the experiments on *-ness* and *-ity* words may be equally valid for experiments which test the productivity, through the use of nonsense words, of other morphological processes. We will take up this point again during the discussion of our data on the productivity of some morphophonemic alternations in Rusyn.

Bybee's model of morphology is, we feel, well suited to encode the determinants of productivity of morphological processes, as discussed above, through the mechanisms of lexical strength and lexical connections. Bybee herself (1985:132 ff.) discusses productivity solely from the perspective of frequency. (Aronoff's (1987) criticism of Bybee's apparent simplification of a rather complex problem is no doubt warranted. But, as noted above, the model presented is flexible enough to admit of a variety of sources for productivity.)

Productivity in Bybee's model requires drawing a distinction between "type" and "token" frequency. We have already mentioned the importance of "token" frequency in determining the lexical strength of items, which leads to their greater autonomy. (The more autonomous items, it will be remembered, while having more lexical strength, have, however, weaker lexical connections to other items.) On the other hand, according to Bybee, it is "type" frequency which plays a crucial role in the productivity of morphological rules. As she explains (133): "high-frequency items tend to be stored as whole autonomous units, while low-frequency items are stored with strong connections to other items." Thus speakers "analyze low-frequency items more than high-frequency items," i.e., they tend to associate the low-frequency items "more strongly with one another." This, in turn, reinforces the patterns of the items with low-frequency. Bybee makes the following prediction:

> The morphological and morpho-phonemic patterns found in a few very high-frequency items will not spread to other items as readily as those patterns that are found in a larger number of medium- and low-frequency items.

The first part of the above statement can be illustrated probably most clearly on the basis of suppletive forms. These are usually very frequent (in terms of "token" frequency), i.e., very autonomous items with high lexical strength, but weak lexical connections. It is precisely because of their high (token) frequency that they are maintained in language, but due to their weak lexical connections their patterns do not spread to other items, i.e., they are non-productive. Bybee illustrates the second part of her prediction with the example of the semi-productive Strong Verb class in English of the type *string, strung* : this class "contains fewer high-frequency and more medium-frequency verbs than all the other strong verb classes, and . . . is the most productive."

Bybee's more recent work (1988) elaborates somewhat more on the notion of productivity. In addition to "type" frequency, she introduces two new factors as determining productivity. The first has to do with the "phonological openness" of a particular class of words to the introduction of new members, i.e., the more phonological diversity is tolerated, the fewer restrictions on the introduction of new forms (we necessarily simplify Bybee's discussion, in order to avoid new terminology which she employs). The second new factor mentioned as influencing productivity is the "cue validity" of a given class of words, i.e., how many words that could belong to the class actually do. The higher the "cue validity" the more productive the pattern. Thus, for example, the mentioned *strung* class of English verbs, has, according to Bybee (138), "high cue validity since almost all of the verbs that could belong to the class do." But such a verb class as *tear, tore; bear, bore; wear, wore* has "low cue validity, since so many regular verbs such as *snared, glared, aired, stared* exist."

In our discussion of Bybee's analogy-based model of morphology, as in our discussion of Labov's sociolinguistic approach to the study of sound change, we have necessarily focused only on certain aspects of the model, namely, those we felt in some ways to be relevant to our own study of morphophonemic variation and change in Rusyn. In doing so we have, of course, presented an impoverished view of the model, revealing, so to speak, only half of its beauty. We hope to be able to at least partially rectify this situation by showing that even this half of the model has strong explanatory power for the morphophonemic processes which we observed in Rusyn. We have cast our study of morphophonemic variation and change in Rusyn within a combined Labovian-Bybee framework which, therefore, takes into account both social and linguistic factors in attempting to explain the "orderly heterogeneity" of language.

CHAPTER FOUR
TWO MORPHOPHONEMIC ALTERNATION PATTERNS IN RUSYN

Our study of morphophonemic variation in Rusyn focuses on two alternation patterns which appear in the declension of masculine nouns in this language. The first of these we refer to as the "velar palatalization" as it is exhibited by some k-stem masculine nouns in the nominative plural, and the second alternation pattern we call the "dental palatalization" since it is evident among some dental-stem masculine nouns in the locative singular. Before proceeding to our study per se, we take a closer look in this chapter at these two patterns and their distribution, as prescribed primarily by the Rusyn grammarian Mikola Kočiš.

A fuller appreciation of the two morphophonemic alternation patterns in Rusyn can be gained by examining their historical origins, and through a comparison of equivalent patterns and environments in Polish, Slovak, East Slovak, and Ukrainian, i.e., those Slavic languages which are close relatives of Rusyn, as well as in Serbo-Croatian, Rusyn's immediate present-day neighbor. The description of the diachrony and the synchrony of the "velar" and the "dental" palatalization patterns in Rusyn forms the remaining part of our discussion in this chapter.

The "velar palatalization" in Rusyn

The morphophonemic alternation which we have labelled the "velar palatalization" appears in some masculine k-stem nouns in the nominative plural before the desinence *-i* . For the affected nouns the stem-final *k* alternates with a *c* in this environment, e.g. *rusnak* "a Rusyn" (male) vs. *rusnaci* "Rusyns" (both males and females). For other nouns, however, the desinence *-i* has no effect on their stem-final *k* which thus remains unchanged in the nominative plural, e.g. *rok* "year" vs. *roki* / **roci* "years." Still other masculine k-stem nouns may appear either in a "palatalized" or in a "non-palatalized" variant in the nominative plural, e.g. *kozak* "cossack" vs. both *kozaci* and *kozaki* (Kočiš 1977:58).

It is clear that the *k* ~ *c* alternation in present-day Rusyn, a remnant of what in Slavic linguistics is referred to as the second regressive palatalization of velars, is not conditioned by the vowel *i* as it once was in Common Slavic. The conditioning environment, according to Kočiš,[1] seems instead to be connected to the distinction animate/inanimate apparent in masculine nouns in Rusyn (see below). Furthermore, this alternation is the only reflex of the second palatalization evident in the Rusyn of today. For example, masculine nouns with stem-final *h*, *(g)*, and *x*, i.e., those nouns which theoretically could also be affected by the second palatalization, show no traces of this palatalization in the nominative plural, e.g. nom.sg. *čex* "Czech" and nom.pl. *čexi* /**česi* . The second palatalization has left no marks in the other nominal declensions in Rusyn. Thus, in the feminine declension, for example, *ka* -stem nouns undergo no palatalization of the final velar in the dative and locative singular, e.g. nom.sg. *ruka* "hand" and dat./loc.sg. *ruki* / **ruci* .

The "velar palatalization" is restricted, therefore, to the domain of k-stem masculine nouns in Rusyn. Those nouns to which it applies, are viewed by Kočiš as "exceptions" within the general pattern of non-alternation (1977:58). And even these few remaining traces of this palatalization, according to Kočiš (1983:32), are "being lost" in present-day Rusyn.

We have mentioned above that the conditioning environment for the "velar palatalization" in Rusyn, according to Kočiš, is created by the animate/inanimate distinction in the masculine declension. In Rusyn, as in other Slavic languages, this semantic category is expressed, for example, in the formal identification of the accusative case with the genitive case for animate nouns, and with the nominative case for inanimate nouns in the singular of the masculine noun declension. The distinction animate/inanimate is expressed also in the plural of masculine nouns in Rusyn, but the above-mentioned formula is modified, due to the appearance of an additional semantic criterion which plays a differentiating role in the animate noun category, namely, the criterion of human vs. non-human.

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[1] The presentation of Kočiš's views is based on his grammar of Rusyn (1977), his school grammars (1965, 1983), his monograph on Rusyn orthography (1980), and his article dealing specifically with the topic of the "velar palatalization" in Rusyn (1971).

Whereas for animate human nouns the formal identification of the accusative with the genitive is retained in both the singular and the plural, and whereas for inanimate nouns the accusative is identical with the nominative in both numbers, the same consistency is absent from the category of animate non-human nouns. Instead, for animate non-human nouns a two-pronged formula applies: acc. = gen. holds true for the singular, while acc. = nom. applies in the plural. Thus, in the singular, animate non-human nouns behave like human nouns, while in the plural they behave like inanimate nouns, e.g. *vidzim človeka, kon'a* acc.sg.= gen.sg. "I see a man, a horse," but *vidzim stol* acc.sg.= nom.sg. "I see a table" vs. *vidzim xlopox* acc.pl.= gen.pl. "I see men" but *vidzim kon'i, stoli* acc.pl.= nom.pl. Exceptions to this exist, and they are found in the plural number, where the non-human nouns sometimes do behave like human ones: *odohnal psi* acc.pl.= nom.pl. and *odohnal psox* acc.pl.= gen.pl. "I chased away the dogs." However, the tendency in present-day Rusyn, according to Kočiš (1977:45), is to give preference to the grouping of animate non-human nouns with human nouns in the singular, and with inanimate nouns in the plural.

The human/non-human distinction in the animate category is formally expressed in Rusyn, for example, in the nominative plural of masculine nouns. Here we find three possible desinences: *-i, -e* and *-ove* . The desinences *-e* and *-ove* combine solely with human nouns which meet certain other criteria: phonological- morphological, i.e., nouns with certain suffixes; and semantic, i.e., nouns denoting certain professions, kinship terms, etc. The desinence *-i* , on the other hand, combines both with human and non-human nouns, as well as with inanimate nouns. It has the highest frequency in the nominative plural of masculine nouns (Kočiš 1977:45). It is, of course, in combination with this desinence that some k-stem masculine nouns in Rusyn undergo the "velar palatalization."

However, as Kočiš (1971:95) explains, traces of the "velar palatalization" are found only among animate k-stem nouns and, with respect to the two sub-groups of these nouns, this morphophonemic alternation is more frequent among human nouns than among non-human nouns. In fact, Kočiš considers the general nominative plural pattern for k-stem non-human nouns to be one of non-palatalization, e.g. *šl'imaki* "snails," *pauki* "spiders," *vovki* "wolves" (which never palatalize and, in this respect, behave identically to inanimate nouns). Non-human nouns which do undergo the "velar palatalization" Kočiš considers "exceptions" and points out that these usually have two variants, a palatalized and a non-palatalized one, of which the former is more frequent in the spoken language, e.g. nom.sg. *bujak* "bull" vs. nom.pl. *bujaci/bujaki* , and nom.sg. *xrobak* "worm" vs. nom.pl *xrobaci/xrobaki* . His recommendation to his Rusyn readers is as follows (ibid.):

> N'ijaka bi xiba n'e bula ked bi še pravilo poobščelo za calu podgrupu, ta bizme mali ... všadzi zakončen'e -ki: pauki, vovki, šl'imaki, ta i bujaki, xrobaki ... (It would be no error if this rule became generalized to the entire sub-group, and we would always have the ending -ki: *pauki* , *vovki* , *šl'imaki* , as well as *bujaki* , *xrobaki* ...)

In addition to the recommendation not to extend the "velar palatalization" to non-human k-stem nouns, i.e., treat them in the same manner as inanimate nouns without the *k* ∼ *c* alternation, Kočiš proposes that the use of this alternation with human k-stem nouns should also be restrained. He states (1971:96) that although indeed the "velar palatalization" is more frequent among human nouns, it is nonetheless limited to individual "truly Rusyn words" *(našo stari slova)*, e.g. *rusnaci, slovaci, žobraci, junaci, robotnici* "Rusyns, Slovaks, beggars, heroes, workers." There is a tendency, as Kočiš admits, to apply this palatalization to "new and borrowed nouns, or nouns which do not have a long tradition" in Rusyn. In Kočiš's estimation, this is due to "the influence of Serbo-Croatian" (95-96). In view of this, his recommendation is not to extend the "velar palatalization" to words "that do not require it," namely, recent borrowings. In fact, in the case of some human nouns, whose nominative plural forms are identical to the nominative plural forms of similar feminine nouns, Kočiš considers it worthwhile to "return the ending *-ki* " in the nominative plural. This he recommends, for example, for the noun *robotn'ik* "male worker" whose nominative plural *robotn'ici* is identical to the nominative plural of *robotn'ica* "female worker." The statement about the "return" of the ending *-ki* seems to imply that the "velar palatalization" in Rusyn is a foreign import, and that the original state of affairs was no alternation in the nominative plural with a few human nouns forming the sole exceptions. With regard to these few human nouns, however, (particularly the noun *rusnak*), Kočiš does insist that in the nominative plural the palatalized forms are legitimate, and are indeed the only correct forms.

To recapitulate briefly, we have seen that the *k*∼*c* alternation in Rusyn seems to be responsive to semantic conditioning, which is not very clearly defined. This alternation is confined to masculine animate nouns, and within the two subgroups which form this class, i.e., human and non-human nouns, it is more frequent among the human nouns (although restricted to a rather ill-defined group), and less frequent among the non-human nouns (most of which seem to behave more like inanimate nouns). Moreover, we have noted the sentiment expressed by the Rusyn grammarian Mikola Kočiš that the "velar palatalization," as a remnant of the second palatalization in Slavic, is characteristic of only a small group of k-stem human nouns at the core of the Rusyn lexicon, while the extension of the "velar palatalization" beyond this group of words is not a native process, but one spurred by the external influence of Serbo-Croatian.

In an attempt to gain a wider appreciation of the "velar palatalization" pattern in Rusyn we turn now to an overview of some relevant aspects of the declension systems of masculine nouns in several other Slavic languages with past and present ties to Rusyn.

The "velar palatalization" from a broader perspective

The second palatalization in Slavic - diachrony and synchrony

The phonological changes referred to in Slavic linguistics as the second regressive palatalization of velars, which were caused by the appearance of new front vowels ($\check{e}_2$, i_2), took place in Common Slavic between the sixth and the seventh century (Shevelov 1964:302). Some changes connected with this process occurred somewhat earlier, in the fifth century, while others continued even through the eighth century (303). The significance of this process for Common Slavic is summed up by Shevelov (307) thus:

> The second palatalization of velars is the first important Sl(avic) phonological development known to us which at least in part proceeded differently in various areas inhabited by the Slavs. For the first time one is dealing with dialectal peculiarities which cut the Sl territory into large regions.

These "dialectal peculiarities" are reflected in the end results of the second palatalization as they are preserved in the Slavic languages of today. According to Shevelov (294), "In the case of *k* all Sl(avic) languages as a rule have *c*, " but the other "reflexes of the second palatalization of velars are poorly represented in the living Sl languages" (296).

In view of this it should come as no surprise that the situation in present-day Rusyn with respect to the preservation of the reflexes of the second palatalization is different from that found even among its closest historical neighbors - Slovak, Polish and Ukrainian.[2] But, at least as far as Slovak and to some degree Polish are concerned, these differences are more of a quantitative, rather than of a qualitative nature.

Among the morphophonemic alternations in Polish, we find a wide representation of reflexes of the second palatalization. Not only has the second palatalization affected all three velars in Polish, it has also been preserved both in the masculine as well as in the feminine noun declensions. The latter nouns preserve this alternation in the dative and locative singular,[3] e.g. nom.sg. *ręka* "hand," *noga* "foot," *mucha* "fly" vs.

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[2] We are referring to the preservation of the reflexes of the second palatalization only in the inflectional morphology of these languages.

[3] The Polish, Slovak, and Serbo-Croatian forms are written in the native orthographies, whereas for Ukrainian phonemic transcription is used.

dat./loc.sg. *(w) ręce* , *(na) nodze* , *(o) musze* , while the masculine nouns preserve this alternation in the nominative plural, e.g. nom.sg. *Polak* "Pole," *Norweg* "Norwegian," *Czech* "Czech" vs. nom.pl. *Polacy, Norwedzy, Czesi* . (The above examples are taken from de Bray 1969:606).

In comparison to Polish, the reflexes of the second palatalization in Slovak are fewer in number. Although historically all three velars participated in this phonological process, in present-day standard literary Slovak only nouns ending in *k* and *x* are affected by this alternation, while those ending in *h (g)* no longer show any traces of it (Carlton 1991). Moreover, the second palatalization survives in Slovak, in contrast to Polish, only in the nominative plural of masculine nouns. Thus we find: nom sg.masc. *Slovák* "Slovak," *vojak* "soldier," *mních* "monk," *Čech* "Czech" vs. nom.pl. *Slováci* , *vojaci* , *mnísi* , *Česi* ; but nom.sg.masc. *vrah* "murderer," *geológ* "geologist" and nom.pl. *vrahovia/*vrazi* , *geológovia/*geolozi* ; nom.sg.fem. *noha* "foot," and dat./loc.sg. *(na) nohe /*noze* . (The examples for Slovak are taken from de Bray, op.cit., Carlton, op.cit., and Mistrik 1985.)

In Ukrainian the morphophonemic alternations associated with the second palatalization affect all three velars and survive in the feminine, masculine and neuter noun declensions. In the feminine declension the alternations are apparent in the dative/locative singular, e.g. nom.s.g *žinka* "woman," *noha* "foot," *muxa* "fly" vs. dat./loc.sg. *(na) žinci* , *(na) nozi* , *(na) musi* . In the masculine and neuter declensions the reflexes of the second palatalization are evinced in the locative singular, e.g. nom.sg. *barak* "barrack," *moloko* "milk," *pluh* "plough," *smix* "laughter," *vucho* "ear" vs. loc.sg. *(u) baraci* , *(u) moloci* , *(na) pluzi* , *(u) smisi* , *(u) vusi* . (The Ukrainian examples are taken from Petik 1975.) In the locative singular of masculine and neuter nouns in Ukrainian, morphological and semantic factors constrain the appearance of the *-i* desinence, and thereby limit the occurrence of the alternations associated with the second palatalization. We do not pursue this topic, as it has no direct bearing on our present discussion, but refer the interested reader to overviews contained in Petik, op.cit.:195, and Šerech 1951:190.)

In contrast to Polish and Slovak, modern literary Ukrainian preserves no reflexes of the second palatalization in the nominative plural of masculine nouns (with the one, possibly single, exception of nom.pl. *druzi* "friends" from nom.sg. *druh*). Vestiges of these are found, however, in Southwestern Ukrainian dialects, i.e., those dialects which are geographically closest to (or are even in) East Slovakia, the original homeland of the Rusyns. All three velars are affected, although, according to Žylko (1969:9), the lexical items which retain these alternations are becoming fewer. Žylko lists only three examples: nom.pl.masc. *vovci* , *ptasi* , *druzi* (nom.sg.masc. *vovk* "wolf," *ptax* "bird," *druh* "friend"). A wider range of relevant examples is found in Horbatsch (1973), who provides a detailed description of a South Lemkian dialect (a Southwestern Ukrainian dialect), spoken in the village of Krasnyj Brid in East Slovakia. Horbatsch (op.cit.:vi) includes the following forms for the nominative plural of masculine nouns: *rodaci, kozaci, vojaci, prostaci, žebraci, hudaci, vovci, xrobaci/xrobaky,* but *vnuky, pastuxy, ptaxy* (nom.sg. *rodak* "relative," *kozak* "cossack," *vojak* "soldier," *prostak* "churl," *žebrak* "beggar," *hudak* "musician," *vovk* "wolf," *xrobak* "worm," *vnuk* "grandson," *pastux* "shepherd," *ptax* "bird"). We infer from this data that reflexes of the second palatalization are preserved in this dialect in the nominative plural of some animate k-stem masculine nouns, but are absent in this context in nouns ending in a stem-final *x* (and probably *h/g*).

Finally, we turn to the situation in Serbo-Croatian where the reflexes of the second palatalization are well-preserved. All three velars participate in the alternations which occur in the feminine and masculine noun declensions. (Alternations associated with the second palatalization occur also in the verbal conjugation in Serbo-Croatian, but these do not concern us here.) As was the case in Polish and Ukrainian, many feminine nouns retain reflexes of the second palatalization in the dative and locative singular. e.g. nom.sg. *ruka* "hand," *knjiga* "book" vs. dat./loc. sg. *ruci* , *knjizi* . In the masculine noun declension the reflexes of the second palatalization are preserved more extensively than in either Polish, Ukrainian or Slovak. In addition to the nominative plural, we find them also in the dative, instrumental, and locative plural, e.g. nom.sg. *đak* "pupil," *izlog* "shop window," *tepih* "carpet" vs. nom.pl. *đaci* , *izlozi* , *tepisi* and dat./instr./loc.pl. *đacima* , *izlozima* , *tepisima* . (The examples for Serbo-Croatian are taken from de Bray, op.cit. and Gudkov 1969.)

If we abstract from the numerous environments in which reflexes of the second palatalization are variously preserved in the above-mentioned Slavic languages, and focus our attention only on the nominative plural of masculine nouns, i.e., that context where we find remnants of the second palatalization preserved also in Rusyn, we make the following general observation: in Polish and in Serbo-Croatian the relevant morphophonemic alternations affect all three velars; in Slovak they affect only two; Ukrainian has no alternations in this environment, although the Southwestern Ukrainian dialects preserve remnants of these alternations in individual words which affect all three velars (but no doubt to various degrees, and the velar *k* is probably affected most). This general observation, which would likely lead us to place Rusyn in a position somewhere between Slovak and the Southwestern Ukrainian dialects, and at the same time impel us to group Polish with Serbo-Croatian, is sorely inadequate in that it ignores the environment in which the alternations take place in the individual languages, and thereby masks an important feature which unites Polish and Slovak (and possibly the Southwestern Ukrainian dialects), but leaves (standard) Ukrainian and Serbo-Croatian seemingly untouched. We are referring to the semantic distinction that Polish and Slovak make between human and non-human nouns in the masculine declension within the overall nominal category of animate vs. inanimate (cf. our discussion on pg. 67), a distinction which is manifested also in the nominative plural. Traces of this distinction are found in Rusyn as well. We, therefore, turn to this topic next.

The semantic context in the masculine nominative plural

Stieber (1979:99 ff.) considers the appearance of the animate/inanimate distinction in the masculine noun declension to have been a Common Slavic phenomenon, and thus shared by all the Slavic languages, although variously preserved to our day. Within the "animate" category, a further distinction, namely, one between "human" and "non-human" masculine nouns was developed in the plural number by several of the northern Slavic languages, among them Polish and Slovak (101). Manifested not only in the expected accusative case, but also, as mentioned, in the nominative, this distinction sets off the masculine human nouns not only from the non-human ones, but, in fact, from all the other plural nouns, irrespective of gender. Thus, in the nominative and accusative plural the treatment of masculine human nouns is unique, while the non-human nouns are treated in these cases like all other inanimate nouns, be they masculine, feminine, or neuter. (This subcategorization of the animate category does not apply in the singular number, where only the animate/inanimate distinction prevails.) The main difference between Polish and Slovak with respect to the human/non-human distinction is, according to Stieber (ibid.), the fact that in Slovak some names of animals (i.e., non-human nouns) are included into the human noun group. Stieber accedes that this indeed was the case also in Polish as late as the seventeenth century, and the present situation emerged only around 1700 due to "analogical leveling" _(wyrównań analogicznych)_ (ibid.) The distinction between human and non-human nouns is manifested through the desinences which combine with the nouns, and partly also through morphophonemic alternations which co-occur with these desinences.

In the development of the northern Slavic languages, including Slovak and Polish, the old Slavic nominative plural ending of masculine *-_ŭ_-stems *-_ove_, according to Stieber (102), did not disappear, but rather assumed the role of a marker of the human noun category. In present-day Polish the ending *-_ove_ is realized as -_owie_ and applies exclusively to human nouns, e.g. _uczniowie_ "pupils," _panowie_ "gentlemen," although as late as the seventeenth century forms such as *orłowie* "eagles," *zubrowie* "bisons," *ptaszkowie* "birds" were also possible (ibid.). A similar situation prevails in present-day standard literary Slovak, where the nominative plural ending *-ovia* < **-ove* is also used solely with human nouns and no longer combines with non-human ones (ibid). In East Slovak dialects described by Koperdan (1940), which include the areas of Spiš, Šariš, and Zemplen (4), i.e., areas wherein lies the original homeland of the Rusyns, the desinence *-ovia* is realized as *-ove* (17). Unfortunately, Koperdan sheds no light on the use of this ending in these dialects, providing only a single example: *sluhove* "servants," which apparently also has the alternative form *sluhy* (19). Horbatsch (1973), however, provides several examples of *-ove* combinations as they appear in the South Lemkian dialect in East Slovakia (e.g. *ujkove* "uncles, mother's brothers," *strykove* "father's brothers," *vitc'ove* "fathers," *synove* "sons," *kumove* "godparents," *bratove* "brothers") all of which indeed are classifiable as human nouns. It is very likely that at an earlier period the *-ove* desinence was used by a larger number of speakers further East, as it still combines with some human nouns in other regions of the Southwestern Ukrainian dialect area where lexical items such as *bratove, svatove, kumove* are attested (Žylko 1969). In Rusyn, as we have mentioned earlier (pg. 68), the *-ove* desinence is also used in the nominative plural and, judging from the examples provided by Kočiš (1977:58), it is used in combination with human nouns, e.g. *sinove* "sons," *ocove* "fathers," *d'idove* "grandfathers," *mužove* "men," *švekrove* "brothers-in-law," *kn'azove* "princes," *panocove* "priests," *vladikove* "bishops."

In our discussion of velar palatalization in Rusyn we mentioned (pg. 68) that the desinence *-e* is also used in the nominative plural in combination with human nouns. This same desinence appears also in Polish, in East Slovak, and in standard Slovak, where it is realized, however, as *-ia* . Thus, we get: Polish *nauczyciele* , East Slovak *učitele* , and standard Slovak *učitelia* "teachers." As this desinence co-occurs only in combination with certain stems (which seem to be describable in phonological and morphological terms), and does not combine with k-stem nouns, we do not discuss it any further, but refer the interested reader to overviews contained in de Bray, op.cit.:620 (for Polish), Koperdan, op.cit.:18 (for East Slovak), and Mistrik, op.cit:34 (for standard Slovak).

If in the present-day Slavic languages under discussion the combinatorial possibilities of the old nominative plural ending **-ove* have become clearly set so as to uphold the distinction between human and non-human masculine nouns without any fluctuation, the same cannot be said of the fate of yet a third nominative plural desinence in the masculine declension, namely, *-i* /*-y* which, in fact, is the most common one. It is in combination with this desinence that the human/non-human distinction seems to be still somewhat in flux, having stabilized only in Polish. And it is in combination with this desinence that the morphophonemic alternations associated with the second palatalization occur, but they normally occur only in those nouns which are marked [+animate, +human] , i.e., human nouns.

This pattern is fully adhered to in present-day Polish, where, incidentally, not only the three velars undergo alternation, but so do other consonants, and the alternations occur not only in nouns, but also in adjectives, as well as in some pronouns (extensive examples are provided by Schenker 1973:104 ff., vol.I; 391ff., vol.II). Without going into the historical development of the *-i*/*-y* desinence in the nominative plural (on which see Stieber, op.cit.:103), we can make the following general observation for Polish: human nouns combine with the desinence *-i* , while non-human nouns combine with *-y*. In conjunction with the desinence *-i* stem-final alternating consonants alternate, while with the desinence *-y* no alternations occur. Thus, the morphophonemic alternations take place only in the human nouns. (In combination with the alternating velars *k* , *g* , however, the desinence *-i* is realized as *-y* , while the desinence *-y* in combination with non-alternating *k* , *g* becomes *-i*.) The *-i*/*-y* nominative plural desinence in Polish is indeed a clear marker of the human/non-human dichotomy in the masculine declension.

We illustrate with a few examples. Human nouns combine with the desinence *-i* in the nom.pl. which, in turn, can trigger an alternation in the stem-final consonant: nom.sg. *Polak, lotnik, Norweg, kolega, Włoch, Czech, student, sąsiad* ("Pole," "flier," "Norwegian," "colleague," "Italian," "Czech," "student," "neighbor") vs. nom.pl. *Polacy, lotnicy, Norwedzy, koledzy, Włosi, Czesi, studenci, sąsiedzi* . On the other hand, non-human nouns, like inanimate nouns, combine with the desinence *-y* in the nom.pl. which has no effect on the stem-final consonant: nom.sg. *wilk, ptak, stolik, róg, dach, kot, zeszyt* ("wolf," "bird," "table," "horn," "roof," "cat," "notebook") and nom.pl. *wilki, ptaki, stoliki, rogi, dachy, koty, zeszyty* . But in seventeenth century Polish the form *wilcy* was still used (Stieber, op.cit.:101).

In standard Slovak the distribution of the *-i/-y* desinence in the nominative plural of masculine nouns is similar to that in Polish, i.e., the desinence *-i* occurs in combination with human nouns, while non-human nouns normally appear with *-y* . The situation in Slovak differs from Polish, however, in at least two respects: first, some non-human nouns behave like human nouns in that they co-occur with the desinence *-i* or vary between *-i* and *-y* ; and second, the alternations that co-occur with the desinence *-i* affect only the two velars *k* and *x* , and the dentals *d, t, l, n* .

The following illustrate the situation in Slovak. Human nouns: nom.sg. *sedliak, vojak, mních, ženích, študent, kamarát, pán* ("peasant," "soldier," "monk," "suitor," "student" "friend," "gentleman") vs. nom.pl. *sedliaci, vojaci, mnísi, ženísi, študenti, kamaráti, páni* . Non-human and inanimate nouns: nom.sg. *býk, slimák, buk, smrek, orech, breh, bažant, kohút, let, had, hrad, vôl, havran* ("bull," "snail," "beech," "fir," "nut," "shore," "pheasant," "rooster," "flight," "snake," "castle," "ox," "jackdaw") and nom.pl. *býky, slimáky, buky, smreky, orechy, brehy, bažanty, kohúty, lety, hady, hrady, voly, havrany* . Fluctuation between the human and non-human noun types is observed in the following non-human nouns: nom.sg. *vlk, rak, drak, vták, pes* ("wolf," "crab," "dragon,", "bird," "dog") vs. nom.pl. *vlci/vlky, raci/raky, draci,* *vtáci/vtáky, psi/psy.* (The examples for Slovak are from Mistrik, op.cit.:33 ff., Stieber, op.cit.:101 ff., and de Bray, op.cit.:537.)

In East Slovak the *-i/-y* desinence seems to follow the same general pattern with respect to the human/non-human distinction in the nominative plural of masculine nouns as in Polish and standard Slovak. As in the latter, several non-human nouns are embraced by the human noun pattern. Thus, the non-human nouns *bujaci* (cf. standard Slovak *býky*), *chrobaci* "worms," *vil'ci* join ranks with the human noun *vojaci* in the nominative plural, although other non-human nouns adhere to the expected inanimate noun pattern: *ptaky* (cf. with standard Slovak *vtáci/vtáky*), *orly, sokoly* "hawks," *barany* "rams," like *duby* "oak trees." The data on East Slovak provided by Koperdan (1940:17 ff.) leaves unclear whether the *-i* desinence triggers an alternation only in k-stem nouns (*bujak, chrobak, vil'k, vojak*), or whether it affects also x-stems (as in standard Slovak) and possibly even h/g-stems (as in Polish). Koperdan's data do suggest, however, that in East Slovak the *-i* desinence may cause alternations in consonants other than velars (as is the case in Polish). The following non-human nouns which adhere to the human noun pattern illustrate this: *kohuci, hadzi, havrani* (cf. standard Slovak *kohúty, hady, havrany*). From this one can perhaps conclude that despite the wider consonantal range of the alternation, the human/non-human distinction, as marked by the *-i/-y* desinence in the masculine nominative plural, may be less viable in East Slovak than either in standard Slovak or Polish.

In the South Lemkian dialect in East Slovakia described by Horbatsch (1973) the pair *-i/-y* also appears in the nominative plural of masculine nouns. Judging from the examples provided (op.cit.:vi), the variant endings may perhaps attest to an earlier semantic distinction between human and non-human nouns which may no longer be viable. Today the appearance of either *i* or *-y* may instead be contingent upon the shape of the stem-final consonant, such that after alternating consonants (this may, in fact, apply only to the velar *k*) and after soft consonants the desinence *-i* is used, while after non-alternating (and) hard consonants the ending *-y* appears. Thus, the nominative plural desinence of nouns with an alternating k-stem, e.g. *rodaci, kozaci, vojaci, prostaci, žebraci, hudaci, vovci, xrobaci* , is the same as for soft stem nouns, e.g. *dni, pin'azi, dveri, xlopci* ("days," "money," "door," "boys"), but different for nouns whose stems end in non-alternating hard consonants, e.g. *vnuky, xrobaky, pastuxy, ptaxy, psy, lisy* "forests," *svaty* (also *svatove*), *dokumenty, didy* (also *didove*). The data available to us are not, however, sufficient for any conclusive statements.

In standard Ukrainian the distinction between human and non-human nouns is not overtly marked in the nominative plural of masculine nouns. The desinence pair *-i/-y* does appear in this environment, but the choice between one or the other member of the pair is not dictated by semantic considerations, but rather by phonological ones: *-i* (also realized in the orthography as *-ï*) combines with stems ending in a soft consonant, while *-y* combines with nouns whose stems end in a hard consonant. Neither desinence triggers any morphophonemic alternations. We can illustrate this on the basis of examples we used throughout this discussion. Hard stems: nom.pl. *pol'aky, vojaky, vovky, raky, xrobaky, smereky, norvehy, kolehy, berehy, monaxy, čexy, ptaxy, orixy, studenty, kohuty, susidy, hady, voly, pany, vorony* "crows," *psy* . Soft-stems: nom.sg. *učytel', den', kin'* "horse," *xlopec'* and nom.pl. *učyteli, dni, koni, xlopci.*

In our discussion of the -i/-y desinence as a marker of the human/non-human distinction in the nominative plural of masculine nouns, we have seen that in Polish, Slovak and (possibly to a lesser extent) in East Slovak the desinence *-i* serves generally as a marker for human nouns, while the desinence *-y* combines with non-human nouns. We have also seen that this pattern is fully adhered to in Polish, while in Slovak and East Slovak some non-human nouns fluctuate between the human and non-human paradigms.

A characteristic feature of this pattern are the morphophonemic alternations that co-occur with the *-i* desinence. We observe differences with respect to this feature among the three languages as well. Whereas in Polish not only the three velars, but also other consonants participate in these alternations, thereby making an alternating consonant almost a regular marker of human nouns, in standard Slovak the velars *k* and *x* and the dentals *d, t, l, n* are affected, while in East Slovak possibly only the velar *k* takes part in the alternation.

If we cast this discussion in the language of Joan Bybee's model of morphology, we can say that in comparison with Slovak and East Slovak, the Polish pattern of morphophonemic alternations is the most productive one since it is phonologically the most "open" pattern, it has the highest "cue validity," and it has the highest "type" frequency (cf. our discussion of the determinants of productivity in Bybee's model in ch. 3, pp. 62-65). While we are in no position to make any statements as to the general productivity of the patterns for marking the human/non-human opposition in the three languages, we note that both in standard Slovak and in East Slovak some contamination of the two paradigms occurs, while in Polish such fluctuations are kept fully at bay.

Finally, we can bring into our discussion the "velar palatalization" process in Rusyn, as it too is a pattern whose goal is to mark the human/non-human distinction in the nominative plural of masculine nouns. Viewed against the background of similar patterns in Polish, Slovak and East Slovak, however, the Rusyn pattern emerges as doubly impoverished. Firstly, the Rusyn pattern lacks the morphophonemically distinct desinence pair *-i*/*-y* which is the main marker of the dichotomy in the other languages. Thus, the single desinence *-i* combines both with human and non-human nouns, as well as with inanimate nouns, and cannot therefore serve as a marker for this semantic opposition. (Of course, the desinences *-e* and *-ove* are markers of human nouns in Rusyn as they are in the other languages.) And secondly, the morphophonemic alternations that reinforce to a greater or lesser degree the human/non-human opposition in the three languages, are restricted in Rusyn to the velar *k*. These alternations then of k-stem nouns in the nominative plural create the one opportunity in Rusyn for manifesting a semantic distinction which for other noun types never surfaces in this environment.[4]

Rusyn's immediate present-day neighbor Serbo-Croatian, on the other hand, makes no distinction between human and non-human nouns in its masculine plural paradigm. The nominative plural desinence *-i* , which appears in the masculine declension, does indeed trigger the palatalization of all three velars. But this is no more than a well-preserved reflex of the second palatalization in Slavic, a purely phonological process, which does not take account of the semantic context. (There is, of course, another desinence in the nom.pl. of masculine nouns in Serbo-Croatian, namely *-ovi* , whose appearance is motivated by such factors as word length, and in combination with which velar stems do not palatalize. If the choice is *-i* , however, then palatalization is automatic, although as noted by W.Browne (1993:314) several exceptions to this exist among recent borrowings, e.g., *koki* "coccus bacterium.")

We must conclude, therefore, that the "velar palatalization" process in Rusyn is distinctly different from what may appear to be a similar, if more general, pattern in Serbo-Croatian. The "velar palatalization" bears a family resemblance to patterns we have described in Polish, Slovak, and East Slovak, but it lacks their generality and strength. In fact, the "velar palatalization" aside, the nominative plural of masculine nouns in Rusyn is comparable in several respects to the nominative plural of masculine nouns in Ukrainian. From such a perspective, the mixed, or transitional character of Rusyn becomes all the more apparent. It is for this reason that the "velar palatalization" is of interest to us, for it undoubtedly is a valuable source of data on morphophonemic variability, productivity, and change.

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[4] Kostel'nik's 1923 grammar of Rusyn contains two examples which may or may not partially contradict this statement. He states (51) that before the nom.pl. desinence *-i* stem-final *d, š* (the latter should probably be *t*) may alternate with *dz, c* if in the nom.sg. the two stem-final consonants can also be replaced by *dz, c* . The examples given by Kostel'nik, however, pertain only to the pair *d/dz* , and no examples of the second alternating pair are provided: nom.sg. *sušed/sušedz* "neighbor," *vred/vredz* "abscess" and nom.pl. *sušedi/sušedzi, vredi/vredzi* . Kočiš's 1980 *Pravopis* (143), however, contains only the nom.sg. *sušed* and the nom.pl. *sušedi* , while Ramač's 1983 *Leksika* (109) includes only nom.sg. *vred* .

The "dental palatalization" in Rusyn

The morphophonemic alternations we have termed the "dental palatalization" are manifested in the locative singular of masculine nouns in Rusyn whose stems end in one of six dental consonants: *d, t, z, s, l, n* . In combination with the locative singular desinence *-e* the stem-final dental consonants alternate, such that *d*∼*dz*, *t*∼*c*, *z*∼*ž*, *s*∼*š*, *l*∼*l'*, *n*∼*n'* . Two other desinences appear in this same morphological environment: *-ovi* and *-u* . They too can combine with dental-stem masculine nouns, but in doing so trigger no consonantal alternations.[5]

The alternations occurring before the desinence *-e* are automatic, i.e., motivated by the phonological environment (cf. the "velar palatalization" before *-i* which is not automatic). However, the choice of the desinence *-e* may not necessarily be automatic, i.e., restricted to a well-defined group of lexical items, since for numerous dental-stem nouns variant forms co-exist in the locative singular: one with the desinence *-e* and, of course, with palatalization, and the other with the desinence *-u* which effects no alternation of the stem-final consonant, e.g. *u roman'e* and *u romanu* "in the novel." It would probably not be correct though to write the matter off simply as an example of free variation. The discussion of this phenomenon by Kočiš (1977:55) leaves one with an impression of a possible "competition" between the two desinences. In the estimation of this Rusyn grammarian (ibid.), the locative case in Rusyn "is still in the stage of development" *(u fazi rozvitku),* so that in making a choice between one desinence or another "it is necessary to rely on one's linguistic intuition *(jazikove čuvstvo)* until such a time when one ending will triumph over the other." Therefore, like the "velar palatalization," the "dental palatalization" is of interest for our study as a source of information on morphophonemic variability, productivity, and change.

Masculine nouns in Rusyn can combine in the locative singular, as we have mentioned, with three desinences : *-ovi, -u,* and *-e* . The choice of the first desinence is, for the most part, rather well defined. Basically it is confined to animate nouns. Within the animate group, however, it seems to be automatic with human nouns, while with non-human nouns both *-ovi* and *-u* occur, and the latter desinence, according to Kočiš (1977:54), is the more frequent one. The desinence *-ovi* is restricted then to animate nouns and does not co-occur with inanimate nouns.

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[5] Our discussion of the "dental palatalization" in Rusyn is based primarily on Kočiš 1977 and 1980.

The desinences *-u* and *-e*, on the other hand, combine with inanimate nouns in the locative singular. Kočiš (op.cit.:55, 1980:45) provides a general overview of the distribution pattern of these two desinences which apparently takes into account the nature of the stem-final consonant. We recapitulate Kočiš's exposition:

1) When the stem ends in a soft, a formerly soft (i.e., ex-palatal), or a velar consonant *(j, l', n', d', t', ž, š, č, dž, c, šč, k, h, g, x),* the ending is *-u* .
2) When the stem ends in a hard consonant which can be softened *(d, t, z, s, l, n),* then the ending is either *-u* or *-e* , but softening occurs only with the latter ending.
3) When the stem ends in a hard consonant which cannot be softened *(b, p, v, f, m, r),* the most frequent ending is *-e* .

The most uncertainty then exists in connection with nouns that fit the description under 2), i.e., dental-stem nouns, although the pattern for nouns fitting the description under 3) may also be subject to some vacillation. However, only the dental consonants participate in morphophonemic alternations before the desinence *-e* . Kočiš in his 1980 *Pravopis* sets out a further refinement of the use of *-e* and *-u* with dental-stem inanimate nouns, i.e., of 2) above. He states (45):

2a) Nouns whose stem-final consonant is either *n* or *d* combine more frequently with *-e* , although they can also combine with *-u* ;
2b) Nouns whose stems end in *l, t, z, s* combine more frequently with *-u* , but can also combine with *-e* .

In his general grammar of Rusyn Kočiš (1977) makes no mention of the above bifurcation of dental-stem nouns, but rather introduces the notion of frequency as the main criterion for determining the choice of ending (*-e* or *-u*) in the locative singular of masculine inanimate dental-stem nouns (as well as nouns fitting the description under 3) above). He makes the following observation (55):

- For some nouns the ending *-e* is more usual than the ending *-u* : *u l'eše* (nom.sg. *l'es* "forest"), *u verbaše* (nom.sg. *verbas* "Vrbas, a town near Ruski Kerestur"), *na stol'e* (nom.sg. *stol* "table"). This rule applies to frequently used nouns, or nouns of foreign origin which are frequently used. Therefore, it will be no mistake to say or write: *u beogradze* "in Belgrade," *u novim sadze* "in Novi Sad," *u roman'e* "in the novel"...
- Nouns of foreign origin which are used infrequently, as well as our own native words *(našo slova)* of infrequent usage are more usual with the ending *-u* : *na oxridu* "in Ohrid"...

One reason for choosing the desinence *-u* rather than *-e* in combination with infrequent foreign or native words, "even in those instances where *-e* should appear," is, according to Kočiš (ibid.), ease of recognition of the word by the hearer/reader. Modifications of the stem introduced by the morphophonemic alternations (accompanying the desinence *-e*) might impede recognition of the word. Therefore, Kočiš advises that "stems of foreign and rarely used native words should be altered as little as possible in order that the word remain intelligible" *(treba co men'ej vimen'ovac že by slovo ostalo rozuml'ive)*. Kočiš provides several examples: *u referatu* "in the speech," *u zvitu* "in the report," *na peronu* "on the railway platform," *na kongresu* "at the congress," *o idealu* "about the ideal."

Restating the above briefly, the occurence of the desinence *-e* in the locative singular of masculine nouns is confined to inanimate nouns whose stems end in a dental consonant, a labial consonant or the trill *r* . In combination with *-e* the dentals undergo alternation, while the labials and *r* remain unaffected. Sharing the same environment with *-e* is the desinence *-u* . This latter desinence is widely used in the locative singular of masculine nouns, appearing also in combination with animate nouns (but only of the non-human subcategory), as well as with other inanimate nouns. Indeed with inanimate nouns the desinence *-u* has wide circulation, being normally excluded only from those nouns whose stems end in a labial or a trill. But even from this last environment it is not completely eliminated, e.g. *u sarajevu* "in Sarajevo," *u frižideru* "in the refrigerator" (Kočiš 1977:55). In the environment of the dental-stems, however, the desinence *-u* finds strong opposition from the desinence *-e* . Here the factor of frequency of occurrence of a given noun plays a role: the desinence *-e* co-occurs with more frequent nouns, while *-u* combines with less frequent nouns. A possible further segmentation of the environment is introduced through the bifurcation of the dental consonants themselves (see 2a and 2b above).

Thus, in present-day Rusyn the desinence *-u* is by far the most widely occurring desinence in the locative case of masculine nouns. The desinence *-e*, on the other hand, restricted to a narrow, if vaguely-defined environment, is no doubt the more salient desinence as a result of the alternations of the stem-final consonants which accompany it.

Unlike the "velar palatalization" which appears only in a single morphological environment in Rusyn (i.e., the nominative plural of masculine nouns), the morphophonemic alternations associated with the "dental palatalization" occur also in word-formation (e.g. *kvet/kvecik* "flower/little flower," *šl'id/šl'idzic* "track/to track), as well as in the Rusyn verb paradigm (e.g. *vezc* inf./*vezol* past masc./*vežem* 1 sg.pres. "to transport by vehicle," *pisac* inf./*pišem* 1 sg.pres. "to write"). And, in contrast to the "velar palatalization" which, as we mentioned earlier, was felt by Kočiš to be generally a non-native, externally-spurred process, the "dental palatalization," on the other hand, is viewed by this Rusyn grammarian as indeed a native process which can be extended even to borrowings, provided they become frequent, and thereby familiar enough so as to prevent difficulties in recognition caused by the stem modifications.

In order to gain a wider view of the "dental palatalization," we briefly compare the situation in Rusyn with that of its relatives and present-day neighbor.

The "dental palatalization" from a broader perspective

The morphophonemic alternations associated with the process of "dental palatalization" in Rusyn cannot be linked to any one single phonological process in Common Slavic or Early Slavic. They are related instead to several such processes, which affected the various Slavic languages differently and, therefore, have not been uniformly preserved in the present. It is not within the scope of this study to sketch the development of these processes in those languages that have been the focus of our attention in this chapter, nor to provide an overview of all the reflexes through which traces of these processes have been preserved to our day. We sketch, therefore, only the general contours of these phonological changes.

The roots of the "dental palatalization" in Rusyn undoubtedly reach back to at least three sound changes of the Slavic historical past. The earliest of these is the change known as "jotation" of consonants which, contrary to what its name implies, resulted not in the addition, but rather in the loss of *j* in consonant clusters. Thus Proto-Slavic clusters of the type *dj, tj, zj, sj, lj, nj* simplified to palatal sounds *d', t', ž, š, l', n'*. Shevelov (op.cit.:633) dates this sound change as occurring within the Common Slavic period between the fifth and the eighth centuries. But while the last four consonants, i.e., *ž, š, l', n',* have been uniformly preserved by the Slavic languages, the first two, i.e., *d'* and *t',* have undergone further development. Only Serbo-Croatian still preserves *d'* and *t'* as palatal affricates (đ/ђ and ć/ћ in the orthography). In Polish and Slovak, on the other hand, *dj > dz* and *tj > c* , while in Ukrainian *dj > dž/ž* and *tj > č* (Carlton, op.cit.).

The development of overall palatalization of consonants before front vowels, which Shevelov (1964.:634) relegates to the period between the ninth and the eleventh centuries, provided a further supply of palatalized consonants in Slavic and gave rise, of course, to the hard/soft correlation characteristic of most Slavic consonantal systems. It is to this process that we can probably directly relate the alternations *l~l'* and *n~n'* that appear in present-day Rusyn in the locative singular of masculine nouns before the ending *-e* , although, as mentioned, the protolanguage already contained palatalized *l* and *n* from the earlier process of jotation.

Palatalization of consonants before front vowels affected, no doubt, also the two dental stops *d* and *t* and resulted probably in the correlation pairs *d : d'* and *t : t'*. In present-day Rusyn *d* and *t* , like *l* and *n* , are distinctively palatalized, e.g. *dialog* "dialogue" vs. *d'ido* "grandfather," *tišl'ir* "carpenter" vs. *t'ilesni* "bodily," *lebed* "swan" vs. *l'ev* "lion," *učeni* "scholar" vs. *učen'ik* "pupil." (We do not claim that these examples necessarily preserve the original *d'*, *t'*, as they could be due to later borrowings. However, we feel that the correlation pairs *d : d'* and *t : t'* did exist in Proto-Rusyn at least for a time as a result of the process of overall palatalization of consonants before front vowels for reasons which we give below.) These same four dentals palatalize distinctively also in standard Slovak and Ukrainian. In present-day Polish and East Slovak, on the other hand, *d'* and *t'* are not phonemically distinct from *d* and *t* . It is worth noting, however, that in present-day Rusyn examples of *d'* and *t'* are much more infrequent than examples of *l'* and *n'* (we base this claim on a review of the orthographic dictionary appended to Kočiš's 1980 *Pravopis*). In fact, in Rusyn, as in East Slovak and Polish, the original *d'* and *t'* were subject at a later period in time to the process of affrication (Carlton, op.cit., Krajčovič 1971:84) discussed below.

With respect to the sibiliants *z* and *s* , present-day Rusyn provides no clue as to whether they too developed softened equivalents *z'* and *s'* as a result of the overall palatalization of consonants before front vowels. Today in Rusyn, as in standard Slovak, but unlike in Polish, East Slovak, and Ukrainian, *z* and *s* are not subject to distinctive palatalization. In Rusyn, therefore, only the pairs *z : ž* and *s : š* exist, while, for example, East Slovak has the full correlation *z : ź : ž* and *s : ś : š* (Koperdan (op.cit.:7). Thus East Slovak *źima, źem, knaź, śl'imak, śnih, śmich* (Koperdan, op.cit.:11 ff.) are realized in Rusyn as *žima, žem, kn'az, šl'imak, šn'ih, šmix* .

The final sound change whose reflexes we find preserved in the present-day "dental palatalization" in Rusyn is the affrication (or assibilation) of *d'* and *t'* to *dz* and *c* . This process also affected Slovak, East Slovak, and Polish, but the non-uniform results no doubt reflect different chronologies when this and possibly the previous sound changes in these languages occurred.

One source of *d'* and *t'* in these languages would have been the process of jotation.

Although the end result of this process in Polish, Slovak, East Slovak, and Rusyn are the affricates *dz* and *c* , Stieber (op.cit.:77) believes that this final stage had to be achieved through an interim one:

> Co do grup *tj dj* , to w moim przekonaniu zmieniły się one najpierw na całym obszarze słowiańskim na miękkie *t' d'* , które dopiero potem uległy różnym zmianon na terenie różnych języków czy dialektów. (With respect to the clusters *tj dj* , it is my opinion that they first changed in all of Slavic to soft *t' d'* , which only later were subject to various changes in the individual languages or dialects.)

In addition to the process of jotation, the later process of distinctive palatalization of consonants before front vowels served also as a source for the appearance of *d'* and *t'* . In the case of Rusyn, the *d'* and *t'* from both of these sound changes must have been available to serve as input into the process of affrication, e.g. *xodzim* "I walk" (where *dz* < *dj*), *placa* "pay" (where *c* < *tj*) and *dzeci* "children" (where *dz* < *dě* and *c* < *ti*). The data presented by Krajčovič (1971), indicate that a parallel sitution existed in East Slovak, e.g. *vidzím, placím* (where *dz, c* < *dj, tj*) and *dzeci, budzece* "you will be" (where *dz, c* < *d, t* + front vowel).

Krajčovič (ibid.) provides evidence from the history of Slovak to show that the process of affrication had its origin in West and East Slovak at the beginning of the thirteenth century. It would probably be safe to extend this same dating to Rusyn. Central Slovak, on which the literary language is based, was not, according to Krajčovič (85), affected by the process of affrication. This, of course, refers only to the *d'* and *t'* resulting from the process of distinctive palatalization (therefore, as mentioned earlier, Slovak maintains the correlation pairs *d : d'* and *t : t'*), but not to the *d'* and *t'* emerging from *dj, tj* which did indeed develop into affricates. A generally similar pattern as in East Slovak with respect to affrication can be noted for Polish, with the important difference that the two sources feeding this process can still be discerned in present-day Polish, such that the *dz* and *c* emerging from *dj, tj* are hard dental affricates, while the *dz* and *c* from the later source are soft (*dź, ć*), e.g. *miedza < medja* vs. *działo < dělo* , and *świeca < světja* vs. *na świecie < na světě* (Carlton, op.cit.).

We have briefly sketched three sound changes which have served as sources for the appearance of palatalized consonants in Slavic, and whose reflexes remain preserved to this day in the morphophonemic alternations of dental consonants in the locative singular of masculine nouns in Rusyn before the desinence *-e* . The alternation *d*∼*dz* , *t*∼*c* we trace back to the process of affrication, which itself drew on two sources for its supply of palatalized dental stops: the jotation of consonants and their distinctive palatalization. Of course, the immediate source for the locative singular would have been the latter process which led to the softening of consonants before front vowels. To this same process we traced the alternation *l*∼*l'* and *n*∼*n'* , noting that the palatalized variants of these consonants were also produced in environments other than before front vowels as a result of jotation. It is to jotation that we trace the emergence of *ž* and *š* , although their appearance in the alternation with *z* and *s* before the front vowel *-e* in the locative singular was probably a later development coinciding possibly with the process of distinctive palatalization of consonants before front vowels. Whereas the first two sound changes (jotation and distinctive palatalization of consonants) occurred in all the Slavic languages under discussion, albeit with different results, the process of affrication, a much later sound change, developed only in Rusyn, East Slovak, Polish and partially also Slovak, but left Ukrainian and Serbo-Croatian unaffected.

Polish preserves a wide array of morphophonemic alternations in the locative singular of its non-feminine declension, a much wider array, in fact, than Rusyn. (Our discussion of Polish is based on Schenker, op.cit.) Only two desinences appear in this environment: *-e* and *-u* . The desinence *-u* occurs exclusively in combination with soft, formally soft (i.e., ex-palatal), and velar stems, while *-e* combines with all the other consonants which automatically palatalize in this context. This last group of consonants consists of dentals and labials.

The distribution of the alternations in Polish is, therefore, at once more general and more simple than in Rusyn, not being sensitive to the various restrictions apparent in

Rusyn, but rather appearing predictably with certain noun stems which have but a single combinatorial possibility in the locative singular which, if it is *-e* , always results in an alternation. In this vein it is of interest to point out that whereas in Polish the desinence *-e* combines both with dental and with labial stems and triggers an alternation in both, in Rusyn the two types of noun stem *may* combine with *-e* , with the alternations only in the dental stems (refer to conditions 2) and 3) mentioned earlier). Similarities and differences between Polish and Rusyn exist also with respect to the dental alternants themselves. The Rusyn alternating sets *d~dz, t~c, l~l', n~n'* can be seen as parallel, although not identical, to the Polish alternants *d~dź, t~ć, ł~l, n~ń* . The two languages differ, however, with respect to the sibilants. Whereas in Polish *z~ź* and *s~ś* , in Rusyn the equivalent alternation is *z~ž* and *s~š* , since present-day Rusyn, as mentioned earlier, has no *z'* or *s'* .

The situation in East Slovak with respect to the locative singular of masculine nouns cannot be fully described on the basis of sources available to us, as neither Koperdan (op.cit.) nor Krajčovič (op.cit.) specifically mention any morphophonemic alternations in this environment. The occasional example in the works of these authors leads us to infer, however, that at least minimal vestiges of these alternations exist in East Slovak.

Unlike Polish, but similar to Rusyn, the locative masculine singular in East Slovak contains three desinences: *-ovi* , which combines with animate nouns, and the two desinences *-e* , *-u* , which occur with inanimate nouns. Krajčovič (84) cites two forms which contain *dz* < *d* , and *c* < *t* : *v ohradze* < *ohrada* "enclosure," *na ploce* < *plot* "fence." Both are inanimate nouns, and the alternations in both instances occur before *-e* . We may predict that these are not the only examples of *d~dz* , *t~c* in the locative singular, if only on the basis of our earlier observation that the same alternants appear in the nominative plural of masculine nouns, thus indicating to us that the alternation might be now, or was in the past more widespread, and, therefore, not restricted in the locative singular to only two items. We have no examples of *l~l'* or *n~n'* in the locative singular in East Slovak, nor of the alternation of the two sibilants. With respect to the sibilants, however, the general situation in East Slovak is similar to that in Polish and Ukrainian, where both *z* and *s* can palatalize distinctively, which is not the case in Rusyn.

Standard Slovak has four desinences in the locative singular of masculine nouns - *ovi, -u, -e, -i* - whose distribution is at least partially dependent on the animate/inanimate distinction. Thus, animate nouns combine with *-ovi*, and a few with *-u*, while the choice of desinence with inanimate nouns depends on the stem-final consonant: *-u* with velar stems, *-e* with other hard stems, and *-i* with soft stems. The desinences *-e* and *-i* trigger automatic palatalization of the dentals *d, t, l, n*. Thus: nom.sg. *chlap* "man," *prah* "threshold," *dub* "oak tree," *meč* "sword," *hrad* "castle" are loc.sg. *(o) chlapovi, prahu, dube, meči, hrade* (de Bray, op.cit.:536 ff., Mistrik, op.cit.:33 ff., Short 1993:539).

The desinence *-ovi* appears in the locative singular of masculine nouns also in Ukrainian, and as in Rusyn, Slovak, and East Slovak combines with animate nouns. Two further desinences are also present in this environment *-u* and *-i*. The latter desinence triggers automatic palatalization of all stem-final dental consonants (as well as the alternation of stem-final velars - a reflex of the second palatalization). (Petik, op.cit.:195 provides a full description of the pattern in Ukrainian.)

Rusyn's present-day neighbor Serbo-Croatian, unlike Rusyn, Slovak, East Slovak and Ukrainian, makes no distinction in the locative singular of the masculine declension between animate and inanimate nouns. In this environment Serbo-Croatian also has no morphophonemic alternations. Moreover, it makes do in the locative singular of masculine nouns with only one single desinence, namely, *-u*: nom.sg. *mesar* "butcher," *čitalac* "reader," *drug* "friend," *tanjir* "plate," *nož* "knife," *sto* "table," *zakon* "law," *konj* "horse" and loc.sg. *mesaru*, *čitaocu*, *drugu*, *tanjiru*, *nožu*, *stolu*, *zakonu*, *konju* (Gudkov, op.cit.:24 ff., Prince, 1960:10 ff.).

The process of "dental palatalization" in Rusyn, as we have seen, contains a number of similarities with patterns apparent in the locative singular of masculine nouns in Polish, East Slovak and standard Slovak. One can discern a slight resemblance also to the pattern in Ukrainian. Thus, the Rusyn "dental palatalization" partially overlaps with the pattern of morphophonemic alternations which exists in Polish and possibly East Slovak in the locative singular before the desinence *-e* . But, as in the case of the "velar palatalization," so with the alternations in the locative singular, the pattern in Polish is much more general and, at the same time, simpler, while the Rusyn pattern is more restrictive and, as a result, more complex. The resemblance between the Rusyn pattern in the locative singular of masculine nouns and equivalent patterns in standard Slovak and Ukrainian touches on the semantic aspect of this pattern, i.e., on the categorization of nouns along the criterion of animateness as manifested through distinct desinences. This same categorization is evident also in East Slovak, while in Polish it apparently has no consequences in this environment. It can be said, therefore, that the Rusyn pattern in the locative singular of masculine nouns to this day bears some family resemblance to equivalent patterns in languages which are its historical relatives.

The desinence *-u* , which appears to a greater or lesser degree in the masculine locative singular of all Slavic languages (Stieber, op.cit.:109 ff.), and has completely generalized in this environment in Serbo-Croatian, must certainly also be viewed as a point of similarity between the Rusyn and the Serbo-Croatian patterns. In fact, as we have mentioned earlier, this desinence has a wide distribution in present-day Rusyn, which only strengthens the parallelism between the two patterns. From such a point of view, the desinence *-e* in Rusyn, with its concurrent consonantal alternations, can be perceived as somewhat of an anomaly, although a truly conspicuous one. In a language contact situation the fate of this anomaly should be of interest.

In our presentation of the two morphophonemic alternation patterns in Rusyn, which are at the heart of our study, we have drawn selectively on both diachronic and synchronic data not only from Rusyn, but also from related and neighboring Slavic languages. The historical depth we felt is necessary for a better understanding of the multiple facets of these patterns, while the synchronic view we hoped would enhance the perception of the stimuli, as well as of the obstacles to the existence and survival of these two morphophonemic processes in Rusyn.

CHAPTER FIVE

THE RUSYN STUDY: DATA COLLECTION AND ANALYSIS

In an attempt to see at close range how the native speakers of Rusyn treat the two morphophonemic alternations, which we have labelled the "velar palatalization" and the "dental palatalization," and thereby gain some insight into questions of morphophohemic variability, productivity, and change, we travelled to the Rusyn communities in Vojvodina where we collected data on the use of these alternations by a variety of native Rusyn speakers. Our field work extended over a period of about four months during the course of 1985 and 1986. A preliminary trip was made earlier, however, in the fall of 1984, in order to become acquainted with the Rusyn community structure and to establish first contacts among the Rusyns. The main data collection was undertaken on three subsequent trips to Vojvodina during the time period mentioned.

The time of our field work was both exhilarating and trying. Every day brought with it exciting new discoveries, but at the same time overwhelmed with puzzling questions and uncertainties. These little triumphs and defeats will remain untold here, although their consequences will no doubt become evident soon enough. On the following pages we will instead describe the organization of our field work, i.e., how we chose our informants, and how and what kind of linguistic data we elicited from them.

The time away from the field proved no less exhilarating and trying. The collected data certainly bore vivid testimony to the variability and heterogeneity of linguistic structure, thus upholding the first of the two "empirical foundations" of the Labovian model, that of "normal heterogeneity," according to which "the normal condition of the speech community is a heterogeneous one" (Labov 1982:17). However, a systematic and orderly description of this heterogeneity along social and linguistic axes, as required by the Labovian model, proved to be no easy task. The data simply refused to be cast into previously shaped molds. When we were on the verge of total hopelessness and frustration, all was saved by the analytical technique called "response coincidence analysis" (Baker and Derwing 1982), which enables one to study the data on the basis of criteria which emerge from within the data corpus itself, rather than being imposed on it from without. In the latter part of this chapter we provide a brief description of the procedures of the "response coincidence analysis."

The organization of the field work

The population sample

In choosing the informants for our study we were guided by several considerations. The first of these emerged from the second of the two "empirical foundations" of a theory of language and language change within the Labovian model, namely, that the object of linguistic description should be the "linguistic" or the "speech" community, rather than any one single representative of it (Labov, op.cit.:18; also WLH 1968:188).

A further consideration in our choice of informants related to another principle of the Labovian model, namely, that any linguistic change is embedded not only in linguistic structure, but proceeds in a patterned way also through the social structure and that "social factors bear upon the system as a whole" (WLH, op. cit.:185). Labov (op.cit.:76) identified five "dimensions of social structure" which have been shown to be relevant to linguistic change: "social class or status, race or ethnicity, age, gender, and locality." Earlier we have argued (Chapter Three:40) that these five "dimensions of social structure" are not necessarily generalizable across all cultures, and care must be taken to find the appropriate "dimensions" for any given linguistic community.

The most problematic of these "dimensions of social structure" for any linguist is that of "social class," or "socio-economic class," unless, as pointed out by Horvath (1985:45), "the assignment of class to individuals has first been made by a sociologist." In the case of the Rusyn community such a sociological categorization is unavailable. Moreover, our own observations in the field led us to conclude that in the case of the Rusyns socio-economic class may not be an important factor at the present time, although this may, of course, change in the future. Most of the Rusyns of Vojvodina are village dwellers (the statistics compiled by Spieß (1986:97) indicate that some 87% of the Rusyns of Vojvodina reside in villages or small towns). The number of Rusyns in Vojvodina's cities and larger towns, where the possibilities of socio-economic differentiation are much greater, is still relatively insignificant. Of course, we do not deny the possibility, and, in fact, are fairly certain that some sort of social stratification does exist in the villages. After all, not all village residents are farmers (and even here differences are evident). In the villages there are also teachers, priests, shop owners, etc. These various occupations may carry with them differences in social status and prestige. However, to our knowledge, a study of this type of social stratification within the Rusyn community is lacking. Therefore, our choice of informants did not reflect this first "dimension" of social structure.

The second of Labov's social variables, "race or ethnicity," also did not play a role in our study, as we concentrated only on speakers of Rusyn who were also ethnically Rusyn. An extension of this study among Rusyn speakers of other ethnic origins (e.g. Serbs married to Rusyns) would undoubtedly be of interest, but was beyond the scope of our possibilities.

In building up a network of informants we did, however, make choices which would allow for observations about the three remaining social factors: "age," "gender," and "locality," which we have relabelled "residence." (For an overview, see Table 5.1.) We also took note of the education level of our informants, although we were unable to strictly control for this factor (Table 5.2). During the course of our field work we interviewed a total of 101 subjects. 64 of these were between the ages of 20-84. The other 37 subjects were younger than 20. The former group we refer to as the "adult" subjects, and the latter group as the "non-adult" subjects. All of the subjects were bilingual (Rusyn and Serbo-Croatian), reflecting the situation in the Rusyn population in general (Spieß, op.cit.:91).

Table 5.1: OVERVIEW OF RUSYN SPEAKERS PARTICIPATING IN OUR STUDY

ADULT SUBJECTS (LONG QUESTIONNAIRE)	Ruski Kerestur		Novi Sad			
Age	Female	Male	Female	Male		
20-29	4	4	5	5		
30-39	4	4	2	2		
40-49	3	3	2	2		
50-59	2	2	2	2		
60-69	2	2	2	2		
70 & older	2	2	2	2		
Total adult informants:	17	17	15	15	=	64
NON-ADULT SUBJECTS (SHORT QUESTIONNAIRE)						
Grade						
1 - 4	3	3	3	3		
5 - 8	3	3	4	3		
9 - 12	3	3	3	3		
Total non-adult informants:	9	9	10	9	=	37
Total adult and non-adult subjects:	26	26	25	24	=	101

We turn now to a brief description of the social variables: "residence," "gender," "age," and "education," as they have been used by us in this study.

Residence

Informants were chosen from the two cultural centers of present-day Rusyns: the village of Ruski Kerestur (RK) and the city of Novi Sad (NS). In both of these locations the socio-cultural aspect of Rusyn community life is well organized (see our discussion in Chapter One:2-3). It was, therefore, relatively easy to establish contacts in both places and to build up a network of informants. In both RK and NS one of the first points of contact were the priests of the local Rusyn parishes, as well as the sisters of the convents found in the village and the city. They themselves did not serve as informants for our study (with the exception of one priest in RK and one nun in NS), but rather provided numerous leads to the type of speakers we were interested in. In RK we had access also to the local elementary and secondary school from which we drew all of our non-adult (RK) subjects. In NS another point of contact (and an important source of information on the Rusyns and their language) was the Department of Rusyn Language and Literature at the University of Novi Sad. Several of our younger adult (NS) subjects were or had been students of this department.

The distance between RK and NS is some 50 kilometers, and the contacts between the Rusyn residents of both places are strong. Most of our informants maintained such contacts, and many, in fact, travelled frequently between the two locations to visit family and friends, or to take part in some festivities.

Although Rusyn organized life is evident in both RK and NS, the background against which this takes place in village and city is starkly different. RK is a truly Rusyn village. Of its 6,099 inhabitants, 5,694, i.e., 93%, are Rusyns (Spieß, op.cit.:97 for the year 1981). The language of communication is Rusyn - it is heard and spoken in the streets, in the shops, in the church, and in the school; one hears it spoken among the adults, as well as among the youth, among the native Rusyns, as well as among the non-Rusyn residents of the village. In NS, on the other hand, Rusyn life, both organized and private, takes place against the backdrop of Serbian life. The Rusyns form but a small minority in this city, constituting approximately 1% of its inhabitants.[1] And although there are numerous opportunities to speak and hear Rusyn, there are at the same time more constraints on its use. The dominant culture in the city is , after all, Serbian.

We hypothesized, therefore, that the place of residence of our informants, i.e., village vs. city, may be a factor responsible for differences in treatment of the two morphophonemic alternations we have set out to study. For this reason the subjects for our study were approximately equally distributed between Ruski Kerestur and Novi Sad (Table 5.1; also Table A.1 in Appendix A).

Gender

This social category has no unique designation in our study, and, therefore, requires no special definition. In choosing our informants, we included, of course, members of both sexes, and, in order to make observations about this category reliable, we attempted to provide equal representation to both of them (see Table 5.1; also Table A.1 in Appendix A). The number of our adult subjects is indeed equally divided between women and men. In the case of our non-adult subjects, however, the females have a slight advantage over the males (19 females, i.e., 51%, to 18 males, i.e., 49%).

Age

With respect to the category of age, our subjects can be divided into two main groups: adults and non-adults. The adult group includes subjects between the ages of 20-84, while the non-adult group includes speakers younger than 20. The adult group consists of 64 subjects; the non-adult group of 37 (Table 5.1).

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[1] Exact statistics on this point are unavailable to us. We arrived at the above figure in a roundabout way. The total population of NS in 1980 was 280,000, according to figures provided in the city map from that year (*Novi Sad: Plan Grada*). Nine years earlier, i.e. in 1971, there were 2,194 Rusyns in NS (Spieß, op.cit.:97). During the next nine years, i.e. until 1980, there was probably a steady increase in the number of Rusyns in NS, but no dramatic migration of Rusyns into NS has been reported. Thus by 1980 the Rusyns constituted perhaps between 1 - 2% of the total population of this city. This figure has probably not changed much in the last decade, since along with the normal growth of the general population of NS, including the number Rusyns, there is also, as I was told by numerous activists of the Rusyn community, a steady rate of assimilation among the Rusyns to Serbian culture.

These two groups do not reflect a division into "parents" vs. "children." (There are a few such "parent/children" sets among our NS subjects, but these are the exception rather than the rule.) In fact, the dividing age between the two groups is somewhat arbitrary, and it may be that the oldest teenagers could be grouped together with the adults. In separating the non-adults from the adults, however, we wanted to ensure that any variability in the data for the adult group was not the result of different stages in the acquisition process of the language, but that it reflected possible differences in the linguistic norm or norms of the speech community.

In that sense the treatment of the two morphophonemic alternation patterns by the adult group is of primary interest to our study. The treatment of these patterns by the non-adult subjects is of interest to us to the extent that it reflects the emergence of tendencies found in the adult group and possibly hints at their strength.

In order to allow for observations of any linguistic change in progress which may be dependent on differences in age finer than the general difference between "adults" and "non-adults," the adult subjects are further divided into six age levels of ten-year intervals each (Table 5.1; also Table A.2 in Appendix A). There is a slight imbalance in the number of subjects at the six age levels favoring the younger age brackets. This is due to the situation we encountered in the field, where older informants were more difficult to locate than younger ones.

Ensuring a balanced sample of non-adult subjects was a relatively simple task in the village where, as mentioned earlier, we had access to the local elementary and secondary school. This being the case, however, we chose as the basis for grouping our RK non-adult subjects their grade level rather than their age. Three grade levels were selected: Grade 1, Grade 6, and Grade 11. All the RK non-adult subjects were drawn from these three grades. The situation was starkly different in the city, where subjects from the same three grades were not easy to find. We were, therefore, forced to widen the grade brackets for the NS non-adult subjects. This resulted in three grade groupings for the non-adult NS subjects: Grades 1-4, Grades 5-8, and Grades 9-12 (Table 5.1).

Education

Having built up a network of informants on the basis of the three social variables discussed above ("residence," "gender," and "age"), we also took note of the level of education the informants had attained. The education variable was thus not a criterion for choosing the subjects for our study. Nonetheless, the information as to the education level of the informants was felt to be possibly important and was, therefore, entered into the questionnaires during the interviews. (This discussion pertains only to our adult subjects.)

Although the studies by Labov, which we have amply cited in Chapter Three, do not include "education" as a variable of possible importance to language change, they do assign a significant role to the "socio-economic class" of the speakers. Socio-economic status, however, is determined, at least partially, by the level of education attained by the speaker. We have already mentioned that within the Rusyn community there is no noticeable socio-economic differentiation. However, observations made during our field work led us to believe that the level of education of the informants may, to some extent, influence their linguistic behavior. In this respect we note that Priestly (1984, 1986), working in a language-contact situation, also hinted at a possible role of the education factor in the linguistic behavior of speakers. It is probably the case, however, that the picture is more complicated, and it is not just the education of the speakers but also their attitudes toward the language(s) which motivate their linguistic behavior (Priestly 1980 is an enlightening study in this vein and contains ample references).

In view of what has been said, one may naturally ask, why, in choosing our informants, we did not use the education factor as criterional. The answer must once again be attributed to the situation we encountered in the field, namely, that the attainment of

Table 5.2: OVERVIEW OF ADULT SUBJECTS WITH RESPECT TO EDUCATION

(n = 64)

EDUCATION LEVEL	Total	Percent
higher	28	44%
secondary	16	25%
elementary	20	31%

higher, and even secondary, education is more characteristic of the younger members of the Rusyn community, than of the older ones. For this reason it would have probably been impossible to balance our population sample (and retain its present size), if the education level of the speakers was taken into account along with their age, gender, and place of residence.

It was, therefore, decided that the choice of informants should not be based on their level of education, but that this information should be noted during the interview. We asked the informants about the number of years they attended school, and requested that they classify the highest level which they completed (or are in the process of completing), i.e., whether elementary, secondary, or higher. (In the past seventy years the school system in Vojvodina was subject to several revisions, a consequence of major political changes in that part of the world. For this reason the elementary and secondary school systems are not entirely identical for all the speakers represented in our study. This was a further motive for rejecting the education variable as a basis for choosing our informants.)

An overview of our subjects with respect to their education level is provided in Table 5.2. The surprisingly large proportion of speakers with higher education in our sample is due in part to the imbalance noted above in the distribution of our informants with respect to the category of age: the disproportion in favor of speakers with higher education coincides with the slight advantage in numbers which speakers in the younger age brackets have over the older ones in our study. (For a more detailed picture of the correlation between the level of education of the subjects and their age, gender, and place of residence see Tables A.3 - A.5 in Appendix A.)

The linguistic questionnaire

Since our study focuses on two morphophonemic patterns which we have labelled the "velar palatalization" and the "dental palatalization," we prepared a list comprised of both k-stem masculine nouns and dental-stem masculine nouns. As we were interested both in questions of morphophonemic variability and change, and in the question of morphophonemic productivity, we included in our word list, in addition to real Rusyn words, also non-existing, but possible words in this language.

The use of non-words in experiments designed to reveal speakers' internalization of linguistic patterns has been widely reported and acclaimed in the linguistic literature. Pioneered by Berko (1958) to demonstrate rule-governed behavior by children, the non-word technique has been successfully extended by Derwing and Baker (1977, 1979) to gain a better understanding of the order of acquisition by children of inflectional and derivational morphology. Bybee and Pardo (1981) adapted the non-word technique to experimental tasks aimed at revealing morphological patterns of adult speakers. By including possible non-words on our list of real k-stem and dental-stem masculine nouns, we were thus following a widely tested linguistic practice in gaining a glimpse at the regularity and strength of certain morphological and morphophonemic patterns.

We drew up two linguistic questionnaires: a long questionnaire for the adult subjects, and a short questionnaire for the non-adult informants. Both questionnaires contained k-stem and dental-stem real and possible, but non-existent nouns, and differed only with respect to the number of items included. The long questionnaire contained 43 k-stem and

Table 5.3: LEXICAL ITEMS

k-STEM MASCULINE NOUNS

	REAL WORDS	POSSIBLE NON-WORDS	TOTAL
LONG QUESTIONNAIRE	34	9	43
SHORT QUESTIONNAIRE	21	9	30

DENTAL-STEM MASCULINE NOUNS

LONG QUESTIONNAIRE			
d-stems	12	4	16
t-stems	13	4	17
z-stems	4	3	7
s-stems	11	4	15
l-stems	8	4	12
n-stems	13	4	17
	61	23	84
SHORT QUESTIONNAIRE			
d-stems	6	2	8
t-stems	7	2	9
z-stems	2	2	4
s-stems	5	2	7
l-stems	5	2	7
n-stems	6	2	8
	31	12	43

TOTAL LEXICAL ITEMS

	k-STEMS	DENTAL-STEMS	TOTAL
LONG QUESTIONNAIRE	43	84	127
SHORT QUESTIONNAIRE	30	43	73

84 dental-stem nouns (real and non-words) for a total of 127 lexical items. The short questionnaire, on the other hand, included 30 k-stem and 43 dental-stem nouns (real and non-words), for a total of 73 items (a more detailed break down of the items on both questionnaires is provided in Table 5.3). The lexical items on the short questionnaire were a subset of the items contained on the long questionnaire.

We turn now to a brief description of the lexical items we selected to be included on the questionnaires.[2]

The k-stem nouns

Since the "velar palatalization" pattern exhibited by some k-stem masculine nouns in Rusyn may be responsive to several semantic features, such as animateness, and humanness (see our discussion in Chapter Four), our list of k-stem nouns includes items both with and without these features. (For a full listing refer to Appendix B).

The main grouping on the list divides the real words from the non-words. Care was taken to create non-words which would sound as Rusyn, and, therefore, as real as possible. Each non-word was also given a meaning. But whereas we attempted to make the words sound native, the meanings we assigned to them placed them in some foreign context. This was done in the hope of strengthening the conviction that the words were indeed real in at least some language, and possibly even real, but rare, in Rusyn.

Further groupings on the word list (for both real and non-words) follow the above-mentioned semantic differentiation: animate vs. inanimate, and within the former category a further division into human vs. non-human. Among the words marked [+animate, +human] there is an additional small grouping of items referring to specific ethnic groups, which we labelled [+ethnic group] . This grouping was introduced on the basis of observations both in the field and while leafing through Rusyn written texts, which led us to hypothesize that this semantic feature may also play some role in the "velar palatalization" pattern.

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[2] In compiling our word lists we drew on the following sources: Horbatsch 1969, Kočiš 1972, 1977, 1980, Kostel'nik 1923, Nad' 1983, and Ramač 1983.

The real words on the list include three diminutives. This was done following the suggestion by Comrie (1979:51) that morphophonemic alternations may be absent from certain classes of words, in particular, nursery words (which in our context we substituted with diminutives). This category is not represented among the non-words.

In the abbreviated version of the questionnaire, which we used for our non-adult subjects, the same groupings, found in the long questionnaire, are maintained. Thus both questionnaires allow for observations about the possible importance of semantic conditioning in the "velar palatalization" pattern in Rusyn.

The dental-stem nouns

In compiling the list of dental-stem masculine nouns for our questionnaires we were confronted with the problem where nouns of a particular dental-stem were much less numerous (had a lower type frequency) than nouns of another dental-stem. This was the case above all for z-stem nouns. Second on this list were l-stems. This fact is reflected on our questionnaires, where the z-stem items are the fewest in number, followed by the l-stem items (Table 5.3).

The list of dental-stem nouns includes both real words and possible non-words. (A full listing is provided in Appendix C.) In creating dental-stem non-words we followed the same procedure as with the k-stem non-words, i.e., we attempted to create native-sounding words, whose meanings were rather exotic and reminiscent of foreign settings.

One of the hypotheses we were testing with respect to the "dental palatalization" pattern exhibited by some dental-stem nouns was the hypothesis of "local markedness" presented by Tiersma (1982), which we discussed in Chapter Three. According to one principle of local markedness, which may find support in the "dental palatalization" pattern as it occurs in the locative singular of masculine nouns, certain classes of words may be locally unmarked under the following conditions (843):

> In languages with case systems, nouns referring to places are locally unmarked in the locative (or another local) case, and nouns referring to tools or instruments are locally unmarked in the instrumental.

The "unmarked form," according to Tiersma (841) "tends to be more tolerant of irregularity." And whereas it is usually the direct cases, i.e., the nominative, accusative, and vocative, which are unmarked in relation to the marked oblique cases, e.g. the locative case, "real-world factors" may create exceptions "under which an oblique case may be locally unmarked" (843). Such an exception could occur under conditions stated above for the locative case.

Therefore, in selecting lexical items for our questionnaires we included words denoting place names, which would allow us to test Tiersma's hypothesis. These words are marked [+toponym] in Appendix C. The non-words also include toponyms. In creating these we followed the principles outlined earlier.

Collecting the linguistic data

Data on the "velar palatalization" and the "dental palatalization" patterns were collected in the course of individual interviews held with all informants. Interviews with adult informants were held, for the most part, in their homes, and usually on a one-to-one basis. In a few instances, however, the spouse of the person interviewed, or the children may have been present. Several interviews were conducted at the informant's work place, but in such cases no third parties were present. Interviews with non-adult informants in Novi Sad were conducted in their homes, with the exception of a few which were carried out in an office of the Rusyn community hall. In Ruski Kerestur interviews with non-adult informants took place in an office of the local Rusyn school. All non-adult subjects were interviewed on a one-to-one basis with no third parties present.

Interviews with adult informants lasted between a half hour to an hour. Sessions with the non-adult subjects were shorter and lasted from fifteen to twenty minutes. All the information was presented by the interviewer orally and an auditory record was made of the informants' responses.

Informants were told that the interviewer was studying certain aspects of their language and would, therefore, be interested in knowing how they say certain things. Each session began with a series of biographical questions about the informants. This part of the session not only provided information on the sociological variables needed for each speaker, but also served to relax the general atmosphere of the interview.

The next, and main, part of the interview was taken up by the elicitation of the linguistic data. Each stimulus item was first introduced in its nominative singular form, and then repeated unchanged in the context of a sentence. Following this, informants were asked to complete another sentence which called for the nominative plural form, if the item was a k-stem noun, or for the locative singular form, if the stimulus item was a dental-stem noun. The lexical items were presented in a more or less random order, different for each subject, so as to avoid the possibility of any priming effect on the informants' responses.

Prior to the elicitation procedure informants were told that some of the words they would hear in the course of the interview might not be familiar to them (a reference to the possible non-words on our list). These words, they were told, do exist, however, and the informants were asked to treat these unfamiliar words as if they were familiar ones. Our presentation of the non-words differed from our presentation of the real words in one important way, namely, that the introduction of each non-word was accompanied by a definition of the word. Only after the meaning of the non-word was made clear was it repeated in the nominative singular form in a sentence. The remainder of the procedure was identical to the one adopted for the real words.

As we mentioned in Chapter Three, the importance of providing non-words with meanings in experiments designed to test the productivity of morphological patterns was demonstrated by Riddle in 1985. Although Riddle's arguments relate specifically to derivational morphology (she was concerned with the productivity of the derivational suffixes *-ness* and *-ity* in English), we suspected that the same may hold true for some aspects of inflectional morphology as well. In fact, we became convinced of that during our field work when, on several occasions, we presented some of the informants with non-words without any meaning and, in turn, either received no response from them or were directly queried by them about the word's definition.

The analysis of the data

Two approaches to the study of social variation in language

The data we collected in the course of our field work was interpreted by means of an analytical technique called "response coincidence analysis" (RCA). Developed by Baker and Derwing and described in their 1982 paper "Response Coincidence Analysis as Evidence for Language Acquisition Strategies," RCA is an analytical technique which is "directed toward the demonstration of the presence or absence of subject-determined patterns of responses" (196).

In that sense RCA departs from what has become the standard approach in the study of social variation in language (Horvath 1985:63). There are, as Horvath points out, two paths one may travel in undertaking this endeavor (ibid.):

> The first approach, which we will call social grouping, involves sorting speakers into social groups and then averaging the values of the linguistic variables across these speakers; in the second approach, which we will call linguistic grouping, the overall distribution of the linguistic variables is determined and then the people who speak that way are identified.

The sociolinguistic studies pioneered by Labov espouse the approach of the social grouping. It is this approach which underlies the variable rule analysis, which has gained wide recognition and acceptance in studies carried out within the Labovian framework.

According to Horvath (ibid.), "there is every reason to believe that both approaches will converge on a similar description of the variation," if both the social description and the linguistic description are adequate. In fact, she claims that the two approaches are not mutually exclusive, and may even "be used profitably on the same data set," although, as she notes, "there are circumstances in which one would be preferred to the other" (62).

In her own study of the social dialect of Sydney Horvath seems to give preference to the linguistic grouping approach. As her final argument for doing so she provides the following general justification (65-66):

> Perhaps the most attractive reason for choosing a method that allows grouping of speakers according to their linguistic behavior rather than according to their place in a social grid is that as linguists it is the linguistic categories that we are most concerned about and most knowledgeable about. The extralinguistic categories are not as well-understood and are not usually subjected to the detailed analysis given to the linguistic categories.

Of course, swayed by such arguments (all the more so, since in the case of our study the "extralinguistic categories" were indeed not so well understood), as well as by arguments presented by others (e.g. Baker and Derwing, op.cit.:196), and, moreover, frustrated by the unclarity of the implications of our initial analyses based on social groupings, we sought the second approach to the study of variation in language and turned to the "response coincidence analysis" in the interpretation of our data.

Procedure for the response coincidence analysis

Response coincidence analysis, being, so to speak, blind to the social variables present in the data, seeks to establish groupings based solely on the treatment by the subjects of the linguistic items. For a detailed explanation of the steps involved in this procedure we refer the interested reader to the paper by Baker and Derwing cited above. We limit ourselves here to a very general overview of the procedure for the RCA.

In a very broad sense, the RCA can be seen as consisting of two steps. The first of these is the identification of subject groups, i.e., a separation of subjects into strategy groups. Following this, the RCA seeks to determine how each of the subject groups "partitions the object space," i.e., it identifies object clusterings for each subject group. Baker and Derwing explain the necessity for establishing subject groups prior to object groups (200):

> Separation into strategy groups must logically take place before considering how subjects treat the objects being tested since, if general strategy differences exist, meaning systematically different treatment of sets of objects by different groups of subjects, such differences would be obscured in data pooled across all subjects. Studies which analyze such pooled data without first considering the possibility of subject group differences make the strong implicit assumption that all subjects are, within error bounds, operating on the task in exactly the same way. This is tantamount to arguing that only one strategy can be employed. Clearly, this is an unwarranted assumption ...

Subject groups are created "based on the patterns of responses within individuals." This, in itself, consists of several steps. The first of these is the creation of a "response coincidence" matrix for each individual subject. This individual matrix provides information on the "pairwise treatment" of sets of objects by any given informant. It is these individual matrices which then serve as input for further comparisons, on an item by item basis, between subject pairs. A distance metric for all pairs of subjects is defined "which can then be submitted to a cluster analysis to determine if subject or strategy groups can be distinguished in the data" (ibid.).

Once the subject groups are identified, "the distance between objects within each of the subject groups" can be determined. Again a distance metric for all pairs of objects is defined and then submitted to a cluster analysis to determine how each subject group treats the stimuli. It is on the basis of this information that inferences can be made about "the kinds of rules the subjects might be employing that would lead to the observed patterning in the data" (201).

Baker and Derwing sum up the advantages of the RCA thus (ibid.):

> Of course, in employing such a procedure, we have not succeeded in getting inside the subjects' minds. Rather, what we have gained is a strongly empirically based technique for motivating inferences about rules which, presumably, are the basis for an explanation of the patterns we can now observe. Second, the constellation of rules thus inferred then becomes the basis for explaining each of the strategy groups.

Baker and Derwing applied the RCA with a high degree of success to data dealing with children's acquisition of English inflectional morphology. In summarizing their work, they were able to state that their study (219):

> ... has provided an important empirical validation of the analytical methods themselves and serves to instill a measure of confidence that the methodology might now be usefully extended to new situations in which rule-governed behavior is presumed to be the basis for performance, but where little is known in detail about expected results. This approach to the problem of grouping both subjects and stimuli is quite general and should prove effective in a host of areas of this kind.

We took up Baker and Derwing's recommendation and applied the RCA to our data on the treatment by Rusyn speakers of the morphophonemic alternation patterns in Rusyn we labelled the "velar palatalization" and the "dental palatalization." In the following two chapters we discuss the results of our analysis in terms of both subject groups, as well as object clusterings.

CHAPTER SIX

THE "VELAR PALATALIZATION" PATTERN: A CLOSE-UP VIEW

From the initial stages of our field work we encountered a considerable amount of variation among our informants with regard to their use of the "velar palatalization" pattern in the nominative plural of k-stem masculine nouns in Rusyn. Although some general tendencies were perceivable, no two individual response patterns were, in fact, absolutely identical. Thus, each individual informant displays a unique profile. It became possible to view the linguistic behavior of individual speakers within a wider framework of linguistic groups, when the data was submitted to the "response coincidence analysis" (Baker and Derwing 1982, discussed in Chapter Five). Thus, the individual profiles, while not obliterated, could be seen against the background of more general linguistic tendencies prevalent in the speech community. In this chapter we present the results of this effort.

Our list of k-stem masculine nouns differentiates the lexical items on the basis of several semantic features (see below and refer to our discussion in Chapter Five; for a full listing see Appendix B). As we were interested in determining the possible role and relative importance of these features in the use of the "velar palatalization" pattern by our informants, we decided to first gain an understanding of our subjects' handling of the real words on the list, prior to viewing their approach to the non-words. We felt that an undifferentiated analysis of the items might, on the one hand, introduce extraneous factors irrelevant to the application of the "velar palatalization" pattern, and, on the other hand, obscure considerations which may indeed be relevant to this process. Therefore, in submitting our data to the RCA, the data on the real words were entered independently of the data on the non-words.

This was done, however, only for data collected from our adult informants. In the case of our non-adult subjects, their responses to k-stem real words and k-stem non-words were analyzed jointly, since, in comparison with the adults, we tested them for fewer items, and also because their responses were of secondary interest to our study, i.e., only to the extent that they shed some light on the dynamics of patterns found among the adult subjects (see Chapter Five).

In presenting the results of the RCA with respect to the k-stem masculine nouns, we begin with our data on adult speakers, concentrating first on the real words, then on the non-words, and subsequently proceed to data collected from non-adult informants. The discussion follows the procedure of the RCA, i.e., identification of subject groups prior to the analysis of object clusterings.

The method for identifying groupings from a hierarchical clustering pattern is discussed in Baker and Derwing (op.cit.:202). Although, as the authors point out, there are no statistical criteria to aid in deciding how many groups are represented by such clusterings, numerous randomization tests carried out on their own data led to the conclusion that, "linkages or pairings which have a value of less than 0.5 ... are more homogeneous than one might expect from chance pairings, and links in excess of about 1.5 are more heterogeneous than one would expect." Since the dissimilarity values for the Baker and Derwing study are not necessarily generalizable to other data, we used them as orientation markers in establishing groupings for our own study.

The adult sample

The k-stem real words

The long questionnaire for the adult subjects contained 34 k-stem real words. These were differentiated on the basis of the semantic features [± animate], [± human], and [± ethnic group]. Three diminutives were also included on the questionnaire. These were marked respectively [+animate, +human], [+animate, -human], and [-animate, -human].

Subject groups

A cluster analysis divided the 64 adult subjects into three groups. (The results of this analysis are presented in Appendix D, Figure 1.) The dissimilarity coefficient at which the first group links with the rest of the population is 3.181, while linkage between the second and third groups occurs at the value of 1.272. These results suggest a distinct response pattern for the subjects of the first group vis-à-vis the rest of the population, while the within-group differences between the second and third groups are not as striking.

We refer to the subject groups as Group I, Group II, and Group III. Group I includes 16 members; Group II is the largest and includes 34 adult informants; and Group III is the smallest group with 14 members. Tables 6.1, 6.2, and 6.3 provide an overview of the composition of each group with respect to the social variables: "gender," "residence," "age," and "education," and at the same time set the profiles of the three groups against the background of our adult population sample.

None of the three subject groups mirrors the general population in all respects. On the other hand, no single variable, or even combination of variables is sufficient for an adequate description of the membership of any of the groups. Instead, certain social segments may be seen as dominant in each group (or conversely, certain segments of the social spectrum are under-represented in each group), and the rest of the group members are distributed (not necessarily evenly) throughout the social matrix.

Subject Group I (Table 6.1) includes more males than females. More than half of the group members are under forty, while three fourths are under fifty. However, the most prominent characteristic of this group is the predominance in it of speakers with higher education. The distribution of Group I members within the social matrix and the importance of the education factor in the group make-up become more clearly visible when the four social variables are considered simultaneously (Table 6.4; cf. also with Table A.5 in Appendix A for a contrast with the entire adult sample). In comparison with the general population, the percent of males with higher education in Group I is almost twice as high.

Table 6.1: ADULT **SUBJECT GROUP I** (k-STEM REAL WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 16)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**37.5%**	6			50%	32		
Males	**62.5%**	10			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**56%**	9	(4)	(5)	53%	34	(17)	(17)
NS	**44%**	7	(2)	(5)	47%	30	(15)	(15)
AGE								
20 - 29	**31.25%**	5	(3)	(2)	28.125%	18	(9)	(9)
30 - 39	**25%**	4	(1)	(3)	18.75%	12	(6)	(6)
40 - 49	**18.75%**	3	(1)	(2)	15.625%	10	(5)	(5)
50 - 59	**12.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**6.25%**	1	(0)	(1)	12.5%	8	(4)	(4)
70 & older	**6.25%**	1	(0)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**68.75%**	11	(3)	(8)	4%	28	(11)	(17)
secondary	**6.25%**	1	(1)	(0)	25%	16	(5)	(11)
elementary	**25%**	4	(2)	(2)	31%	20	(16)	(4)

Table 6.2: ADULT **SUBJECT GROUP II** (k-STEM REAL WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 34)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**53%**	18			50%	32		
Males	**47%**	16			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**44%**	15	(8)	(7)	53%	34	(17)	(17)
NS	**56%**	19	(10)	(9)	47%	30	(15)	(15)
AGE								
20 - 29	**26.47%**	9	(3)	(6)	28.125%	18	(9)	(9)
30 - 39	**17.64%**	6	(4)	(2)	18.75%	12	(6)	(6)
40 - 49	**17.64%**	6	(4)	(2)	15.625%	10	(5)	(5)
50 - 59	**17.64%**	6	(3)	(3)	12.5%	8	(4)	(4)
60 - 69	**17.64%**	6	(3)	(3)	12.5%	8	(4)	(4)
70 & older	**2.94%**	1	(1)	(0)	12.5%	8	(4)	(4)
EDUCATION								
higher	**32.4%**	11	(5)	(6)	44%	28	(11)	(17)
secondary	**38.2%**	13	(3)	(10)	25%	16	(5)	(11)
elementary	**29.4%**	10	(10)	(0)	31%	20	(16)	(4)

Table 6.3: ADULT **SUBJECT GROUP III** (k-STEM REAL WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP III (n = 14)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**57%**	8			50%	32		
Males	**43%**	6			50%	32		
RESIDENCE			(Fem)	(Males)			(Fem)	Males
RK	**71.4%**	10	(5)	(5)	53%	34	(17)	(17)
NS	**28.6%**	4	(3)	(1)	47%	30	(15)	(15)
AGE								
20 - 29	**28.57%**	4	(3)	(1)	28.125%	18	(9)	(9)
30 - 39	**14.28%**	2	(1)	(1)	18.75%	12	(6)	(6)
40 - 49	**7.14%**	1	(0)	(1)	15.625%	10	(5)	(5)
50 - 59	-	0	(0)	(0)	12.5%	8	(4)	(4)
60 - 69	**7.14%**	1	(1)	(0)	12.5%	8	(4)	(4)
70 & older	**42.85%**	6	(3)	(3)	12.5%	8	(4)	(4)
EDUCATION								
higher	**42.85%**	6	(3)	(3)	44%	28	(11)	(17)
secondary	**14.28%**	2	(1)	(1)	25%	16	(5)	(11)
elementary	**42.85%**	6	(4)	(2)	31%	20	(16)	(4)

Table 6.4: DISTRIBUTION OF ADULT **SUBJECT GROUP I** (k-STEM REAL WORDS) BY GENDER, RESIDENCE, AGE, AND EDUCATION

(n = 16)

	Females (n = 6)						Males (n = 10)					
	RK (n = 4)			NS (n = 2)			RK (n = 5)			NS (n = 5)		
Age	el.	sec.	high	el.	sec.	high	el.	sec.	high	el.	sec.	high
20-29	-	1	1	-	-	1	-	-	-	-	-	2
30-39	-	-	-	-	-	1	-	-	2	-	-	1
40-49	1	-	-	-	-	-	1	-	-	-	-	1
50-59	1	-	-	-	-	-	1	-	-	-	-	-
60-69	-	-	-	-	-	-	-	-	1	-	-	-
70 +	-	-	-	-	-	-	-	-	-	-	-	1
Total	2	1	1	0	0	2	2	0	3	0	0	5
% (n=16)	12.5	6.25	6.25	0	0	12.5	12.5	0	18.75	0	0	31.25

This is true for both the RK and the NS males. In the case of the NS respondents of Group I, we note that all of them, male and female, have higher education. The only subjects in Group I with only elementary schooling are residents of RK aged 40-59. One RK female, in the youngest age bracket, has secondary education. And all the rest of the subjects have higher education.

Subject Group II (Table 6.2), being the largest, is also the most representative of the speech community as a whole. However, even this largest group is not a perfect reflection of the general population, and contains some noticeable imbalances. These occur with respect to the variables "residence" and "age." In comparison with the general population, Group II includes slightly more NS residents; the oldest speakers in the community are

Table 6.5: DISTRIBUTION OF ADULT **SUBJECT GROUP II** (k-STEM REAL WORDS)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 34)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	1	3	2	3	4	4	5	5
30-39	3	1	1	1	4	4	2	2
40-49	2	1	2	1	3	3	2	2
(sub-total1)	(6 +	5=11)	(5 +	5=10)	(11 +	11=22)	(9 +	9 = 18)
%	**32.4%**		**29.4%**		34.4%		28.1%	
50-59	1	1	2	2	2	2	2	2
60-69	1	1	2	2	2	2	2	2
70 +	-	-	1	-	2	2	2	2
(sub-total2)	(2 +	2 = 4)	(5 +	4 = 9)	(6 +	6=12)	(6 +	6 = 12)
%	**11.7%**		**26.5%**		18.75%		18.75%	
(Total)	(8 +	7=15)	(10 +	9=19)	(17 +	17=34)	(15 +	15=30)
%	44%		56%		53%		47%	

almost entirely absent from its ranks. When we view Group II through the prism of these two variables (Table 6.5), their importance in determining group membership becomes all the more apparent. The distribution of Group II subjects under the age of fifty parallels the distribution of subjects in the general population. As such, Group II subjects who are under fifty can be said to be representative of that segment of the entire informant

Table 6.6: DISTRIBUTION OF ADULT **SUBJECT GROUP III** (k-STEM REAL WORDS) BY GENDER, RESIDENCE, AGE, AND EDUCATION

(n = 14)

	Females (n = 8)						Males (n = 6)					
	RK (n = 5)			NS (n = 3)			RK (n = 5)			NS (n = 1)		
Age	el.	sec.	high	el.	sec.	high	el.	sec.	high	el.	sec.	high
20-29	-	-	1	-	1	1	-	-	1	-	-	-
30-39	1	-	-	-	-	-	1	-	-	-	-	-
40-49	-	-	-	-	-	-	-	-	1	-	-	-
50-59	-	-	-	-	-	-	-	-	-	-	-	-
60-69	-	-	1	-	-	-	-	-	-	-	-	-
70 +	2	-	-	1	-	-	1	1	-	-	-	1
Total	3	0	2	1	1	1	2	1	2	0	0	1
% (n=14)	21.4	0	14.28	7.14	7.14	7.14	14.28	7.14	14.28	0	0	7.14

community. However, the distribution of Group II subjects over fifty is not representative of the same segment in the general population. Here we find a predominance of speakers from the city, and concurrently fewer villagers. The oldest speakers of the community are absent from this group, with the sole exception of a 73-year old female, who, as can be predicted, is a city resident.

The imbalances in the social matrix created by the distribution of Group II members are compensated for by Group III (Table 6.3). Here the gaps left along the two axes of "residence" and "age" are more or less filled: village residents outnumber city dwellers in this group by a ratio of 5:2, and practically all of the oldest informants in the sample have joined the ranks of this group. Of course, new gaps are created. When we focus simultaneously on all of the variables (Table 6.6), we notice that in Group III middle-aged speakers are under-represented. In fact, for NS respondents, none are aged 30-69.

Thus, the three subject groups, formed on the basis of comparing response patterns within individuals, show an uneven distribution of speakers through the social matrix. In each group a certain segment of the social spectrum may be seen as dominant, but not to the exclusion of other representatives of the community. Thus, in Group I we can say that males with higher education, and generally younger-aged speakers are the more typical group members. Group II subjects who are under fifty are not significantly different from the same segment of the entire community. But the older members of Group II are less representative of the adult sample, in that they are predominantly city dwellers. The oldest representatives of the community are, in general, members of Group III. Here we also note that the majority of group members reside in the village.

How these three groups of speakers treat the nominative plural of k-stem masculine nouns in their language is the topic which we discuss next.

Object clusterings

The results of the cluster analyses conducted separately for each subject group (Figures 2, 3, and 4 in Appendix D) reveal some overall similarities in the treatment by the speakers of the k-stem real words in the nominative plural. The response patterns for the three subject groups are displayed in Tables 6.7, 6.8, and 6.9. (For purposes of clarity and to facilitate our discussion, we have reordered the items in the individual clusters, as well as the clusters themselves, and have numbered these 1a, 1b, and 2. The contents of the clusters, however, remain group-specific. All responses, including the use of both the palatalized and the non-palatalized variants for a single lexical item *(-ci/-ki)* were produced spontaneously by the informants.)

Table 6.7: OBJECT CLUSTERS (k-STEM REAL WORDS) FOR ADULT **SUBJECT GROUP I**

(n = 16)

		RESPONSES*				
Cluster	Item*	-ci	-ki	-ci/-ki	-kove	Other
1a	rusnak	100%	0	0	0	0
	slovak	93.75%	0	6.25%	0	0
	bujak	87.5%	0	12.5%	0	0
	bratn'ak	81.25%	6.25%	12.5%	0	0
	xrobak	81.25%	0	18.75%	0	0
	dzijak	75%	12.5%	6.25%	6.25%	0
	žobrak	68.75%	12.5%	18.75%	0	0
1b	pol'ak	62.5%	12.5%	25%	0	0
	vojak	50%	25%	25%	0	0
	parn'ak	56.25%	31.25%	12.5%	0	0
	kozak	37.5%	31.25%	31.25%	0	0
	turok	25%	31.25%	43.75%	0	0
	robotn'ik	25%	43.75%	31.25%	0	0
	junak	25%	37.5%	18.75%	12.5%	6.25% ci/kove
	čudak	31.25%	50%	18.75%	0	0
	zradn'ik	37.5%	50%	6.25%	6.25%	0
	učen'ik	0	62.5%	25%	6.25%	6.25% NR**
	vlasn'ik	12.5%	75%	0	6.25%	6.25% ki/kove
	morjak	12.5%	75%	6.25%	0	6.25% NR
	pijak	0	75%	0	0	25% NR
	bracik	0	6.25%	0	93.75%	0
2	unuk	0	100%	0	0	0
	vovk	0	100%	0	0	0
	špak	0	100%	0	0	0
	rak	0	100%	0	0	0
	kon'ik	0	100%	0	0	0
	pn'ak	0	100%	0	0	0
	l'ik	0	100%	0	0	0
	ručn'ik	0	100%	0	0	0
	slovn'ik	0	100%	0	0	0
	stol'ik	0	100%	0	0	0
	kurn'ik	0	100%	0	0	0
	šl'imak	0	93.75%	6.25%	0	0
	hrišn'ik	6.25%	87.5%	6.25%	0	0

* Lexical items and responses are given in phonemic transcription, with the phonemic slashes (//) omitted.

** NR = no response

Table 6.8: OBJECT CLUSTERS (k-STEM REAL WORDS) FOR ADULT **SUBJECT GROUP II**

(n = 34)

		RESPONSES				
Cluster	Item	-ci	-ki	-ci/-ki	-kove	Other
1a	pol'ak	100%	0	0	0	0
	rusnak	100%	0	0	0	0
	bratn'ak	100%	0	0	0	0
	kozak	100%	0	0	0	0
	čudak	97.05%	0	2.94%	0	0
	slovak	97.05%	0	2.94%	0	0
	vojak	97.05%	2.94%	0	0	0
	žobrak	97.05%	2.94%	0	0	0
	bujak	94.11%	2.94%	2.94%	0	0
	parn'ak	94.11%	5.88%	0	0	0
	hrišn'ik	94.11%	2.94%	2.94%	0	0
	dzijak	94.11%	0	2.94%	0	2.94% ci/kove
	turok	91.17%	0	8.82%	0	0
	xrobak	91.17%	0	8.82%	0	0
	junak	88.23%	5.88%	2.94%	0	2.94% NR
	zradn'ik	88.23%	5.88%	5.88%	0	0
	robotn'ik	82.35%	8.82%	8.82%	0	0
	vlasn'ik	73.52%	14.7%	5.88%	5.88%	0
	učen'ik	64.7%	14.7%	2.94%	0	17.64% NR
1b	morjak	47.05%	8.82%	2.94%	0	41.17% NR
	pijak	11.76%	29.41%	0	0	58.82% NR
	bracik	0	29.41%	0	70.58%	0
2	l'ik	0	100%	0	0	0
	ručn'ik	0	100%	0	0	0
	stol'ik	0	97.05%	0	2.94%	0
	vovk	2.94%	97.05%	0	0	0
	rak	0	91.17%	0	8.82%	0
	špak	2.94%	91.17%	0	2.94%	2.94% ci/ki/kove
	kurn'ik	5.88%	91.17%	0	0	2.94% ci/kove
	slovn'ik	5.88%	91.17%	0	0	2.94% NR
	pn'ak	8.82%	91.17%	0	0	0
	kon'ik	8.82%	85.29%	0	5.88%	0
	šl'imak	14.7%	79.41%	5.88%	0	0
	unuk	5.88%	73.52%	5.88%	8.82%	5.88% ci/kove; NR

Table 6.9: OBJECT CLUSTERS (k-STEM REAL WORDS) FOR ADULT **SUBJECT GROUP III**

(n=14)

		RESPONSES				
Cluster	Item	-ci	-ki	-ci/-ki	-kove	Other
1a	pol'ak	100%	0	0	0	0
	rusnak	100%	0	0	0	0
	slovak	100%	0	0	0	0
	žobrak	100%	0	0	0	0
	dzijak	100%	0	0	0	0
	bujak	100%	0	0	0	0
	bratn'ak	92.85%	0	7.14%	0	0
	čudak	92.85%	0	7.14%	0	0
	xrobak	85.71%	0	14.28%	0	0
	robotn'ik	78.57%	0	14.28%	0	7.14% NR
	parn'ak	78.57%	7.14%	14.28%	0	0
	vojak	71.42%	0	21.42%	0	7.14% NR
	učen'ik	71.42%	7.14%	7.14%	0	14.28% NR
	turok	71.42%	21.42%	7.14%	0	0
	junak	57.14%	28.57%	14.28%	0	0
1b	hrišn'ik	50%	35.71%	14.28%	0	0
	kozak	50%	35.71%	14.28%	0	0
	zradn'ik	28.57%	71.42%	0	0	0
	vlasn'ik	14.28%	50%	7.14%	21.42%	7.14% ki/kove
	morjak	21.42%	42.85%	0	0	35.71% NR
	pijak	35.71%	14.28%	0	0	50% NR
	bracik	0	50%	0	50%	0
2	vovk	0	100%	0	0	0
	špak	0	100%	0	0	0
	kon'ik	0	100%	0	0	0
	l'ik	0	100%	0	0	0
	ručn'ik	0	100%	0	0	0
	slovn'ik	0	100%	0	0	0
	stol'ik	0	100%	0	0	0
	kurn'ik	0	100%	0	0	0
	šl'imak	0	92.85%	7.14%	0	0
	pn'ak	0	92.85%	7.14%	0	0
	rak	0	92.85%	0	7.14%	0
	unuk	7.14%	85.71%	0	7.14%	0

All three subject groups seem to partition the object space in two ways: applying the "velar palatalization" pattern (the *-ci* responses) to one set of items (generally items in Cluster 1a, and partially 1b), and not applying this pattern (the *-ki* responses) to another set of items (Cluster 2, and partially 1b). In turn, a glimpse at the lexical clusters themselves reveals that they can be differentiated on the basis of semantic features: whereas items in Clusters 1a and 1b are marked [+human] , items in Cluster 2 can be described as either [+animate, -human] , or as [-animate] . There are three notable exceptions to this generalization, which are treated as such by all three subject groups. The items *bujak* "bull" and *xrobak* "worm," although referring to beings that are animate, but not human, are nonetheless included into Cluster 1a. On the other hand, the item *unuk* "grandson," which makes reference to a human being, appears for all three subject groups in Cluster 2.

Three lexical items: *morjak* "sailor," *pijak* "drunkard," and *bracik* "brother" *(dim.)*, which are contained in Cluster 1b, are treated somewhat aberrantly by the adult population. Particularly, in the case of the item *bracik* we note the frequent use of the ending *-kove* . The palatalization pattern is never used with this item. With respect to the word *pijak* , the formation of the plural presents a problem for many speakers. The same holds true in many cases also for the item *morjak* .

Beyond these general similarities, however, one discerns subtle, but important differences, which, in turn, suggest opposing tendencies in the speech community as regards the use of the "velar palatalization" pattern in the nominative plural of k-stem masculine nouns. Upon closer scrutiny, the division of the object space becomes visibly more differentiated, masking, on the one hand, what may be interpreted as a regression of the "velar palatalization" pattern (Group I), and, on the other hand, a slight advancement of this same pattern (Group II) - from the perspective of a third pattern found somewhere midway between these two opposing forces (Group III).

One may initially be tempted to interpret the response patterns of the three subject groups (when viewed side-by-side in the order: Group I, Group III, and Group II) as reflecting not two opposing forces, but rather various stages of a single trend: from the moderate use of palatalization by Group I subjects, to a more extended use of this pattern by Group II members. In both cases (i.e., two opposing tendencies, or various stages of a single trend) Group III would lie somewhere at midpoint. (That Group III lies indeed at the center will be shown in the course of the discussion.) A choice between the two interpretations can only be made if the social make-up of the subject groups is considered. Although, as we had mentioned earlier, the groups can only be imperfectly described in terms of the social variables selected, certain aspects of the social composition of the groups lend support to the former interpretation, rather than the latter one.

Under a "single trend" interpretation we would expect one or several of the social variables to emerge as descriptively important for all three groups, such that the linguistic behavior of the speakers could be correlated along the social axis as in a progression. This, however, is not the case. Instead at midpoint of the response patterning we find Group III composed mostly of village residents and including almost all of the oldest informants in our sample, i.e., a group which one would expect to be linguistically conservative. Balancing this response patterning on one side is Group I, possibly the most highly advanced social group in our sample (males with higher education, and generally younger-aged speakers), while at the opposite end is Group II, representing, to a greater or lesser extent, the community in general. Such a distribution of the adult speakers, focusing around a conservative center, suggests that whatever movement with regard to variation (and possibly change) is taking place in the speech community, that movement emanates from the center and leads in opposite directions.

Comparing the response patterns of the three groups on a cluster by cluster basis, we note that with respect to Clusters 1a and 1b the most varied pattern is produced by members of Group I. All three responses: *-ci* (palatalization), *-ki* (no palatalization), and *-ci/-ki* (both variants for a single lexical item) are employed. For Group II and

Group III this variation is more limited, and the preference for the *-ci* response is much stronger. Of these two groups, the least variation with regard to Cluster 1a and 1b items is exhibited by Group II members, while Group III speakers produce relatively more varied responses particularly with Cluster 1b words.

The varied response pattern with Cluster 1a and 1b items exhibited by members of Group I reveals that their use of the "velar palatalization" pattern (*-ci* responses) is considerably more moderate in comparison with the other speakers in the sample. For example, for any one item in the two clusters the chance that it will be palatalized in the nominative plural is almost twice as high if the speaker is a member of Group II, as opposed to a member of Group I (Table 6.10). With Group III members the chances lie somewhere midway between the other speakers.

Items in Cluster 2, on the other hand, generate seemingly little disagreement among the subjects with regard to the nominative plural formation. A comparison of the treatment by the three groups of Cluster 2 items reveals only slight differences (Table 6.11). But slight as they may be, these differences allude to more general traits specific to each group.

We note that with Cluster 2 words Group I members exhibit remarkable unanimity in their use of the *-ki* responses. The unwavering consistency is somewhat lessened in the case of Group II subjects, although agreement is still strong for most items. Group III members treat Cluster 2 items in a way more similar to Group I subjects. Thus, Group I subjects, who are the most hesitant users of the palatalization pattern for Cluster 1 items, are at once the most consistent speakers in the sample who do not palatalize Cluster 2 words.

The strong agreement among Group I subjects demonstrated toward Cluster 2 items may be both cause and effect of a much deeper difference between these subjects and the rest of the adult population, particularly speakers of Group II. We note that, whereas for Groups II and III Cluster 2 contains twelve items, in the case of Group I this cluster

Table 6.10: DIFFERENTIAL USE OF THE VELAR PALATALIZATION PATTERN BY ADULT SUBJECTS

(-ci RESPONSES FOR CLUSTER 1, REAL WORDS)

Item	Group I	Group III	Group II
rusnak	100%	100%	100%
slovak	93.75%	100%	97.05%
bujak	87.5%	100%	94.11%
bratn'ak	81.25%	92.85%	100%
dzijak	75%	100%	94.11%
zobrak	68.75%	100%	97.05%
pol'ak	62.5%	100%	100%
xrobak	81.25%	85.71%	91.17%
parn'ak	56.25%	78.57%	94.11%
čudak	31.25%	92.85%	97.05%
vojak	50%	71.42%	97.05%
turok	25%	71.42%	91.17%
kozak	37.5%	50%	100%
robotn'ik	25%	78.57%	82.35%
junak	25%	57.14%	88.23%
zradn'ik	37.5%	28.57%	88.23%
hrišn'ik	6.25%	50%	94.11%
učen'ik	0	71.42%	64.7%
vlasn'ik	12.5%	14.28%	73.52%
AVERAGE USE OF -ci RESPONSES (n = 19)	**50%**	**76%**	**92%**
morjak	12.5%	21.42%	47.05%
pijak	0	35.71%	11.76%
bracik	0	0	0

includes an additional item, namely, the word *hrišn'ik* "sinner," marked [+human] . Moreover, the no-palatalization pattern is transferred by many Group I subjects to items in Cluster 1b, all of them marked [+human] . Group III speakers also apply the no-palatalization pattern to items marked [+human] , but the number of items (Cluster 1b) is

Table 6.11: AGREEMENT AMONG ADULT SUBJECT GROUPS AS TO THE NONAPPLICATION OF THE VELAR PALATALIZATION PATTERN

(-ki RESPONSES FOR CLUSTER 2, REAL WORDS)

Item	Group I	Group III	Group II
l'ik	100%	100%	100%
ručn'ik	100%	100%	100%
vovk	100%	100%	97.05%
stol'ik	100%	100%	97.05%
kurn'ik	100%	100%	91.17%
slovn'ik	100%	100%	91.17%
špak	100%	100%	91.17%
kon'ik	100%	100%	85.29%
pn'ak	100%	92.85%	91.17%
rak	100%	92.85%	91.17%
šl'imak	93.75%	92.85%	79.41%
unuk	100%	85.71%	73.52%
AVERAGE USE OF -ki RESPONSES (n = 12)	**99%**	**97%**	**91%**
hrišn'ik	87.5%	35.71%	2.94%

smaller. For Group II subjects, on the other hand, the no-palatalization pattern is generally restricted to Cluster 2 words (whereas Cluster 1b contains only the three "deviant" nouns on our list).

Thus, the domain of items to which palatalization is not applied in the nominative plural is considerably larger for Group I speakers than for speakers of the other two groups, especially Group II. The differences between the groups in this respect become more pronounced when we compare their *-ki* responses for all Cluster 1 items (Table 6.12). (We have also included the item *hrišn'ik* in this count.)

Table 6.12: AGREEMENT AMONG ADULT SUBJECT GROUPS AS TO THE NONAPPLICATION OF THE VELAR PALATALIZATION PATTERN

(-ki RESPONSES FOR CLUSTER 1, REAL WORDS)

Item	Group I	Group III	Group II
rusnak	0	0	0
slovak	0	0	0
xrobak	0	0	0
bujak	0	0	2.94%
bratn'ak	6.25%	0	0
dzijak	12.5%	0	0
pol'ak	12.5%	0	0
žobrak	12.5%	0	2.94%
vojak	25%	0	2.94%
parn'ak	31.25%	7.14%	5.88%
turok	31.25%	21.42%	0
kozak	31.25%	35.71%	0
junak	37.5%	28.57%	5.88%
robotn'ik	43.75%	0	8.82%
čudak	50%	0	0
zradn'ik	50%	71.42%	5.88%
učen'ik	62.5%	7.14%	14.7%
vlasn'ik	75%	50%	14.7%
hrišn'ik	87.5%	35.71%	2.94%
AVERAGE USE OF -ki RESPONSES (n = 16)*	**36%**	**16%**	**4%**
morjak	75%	42.85%	8.82%
pijak	75%	14.28%	29.41%
bracik	6.25%	50%	29.41%

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* The first three items on the list (*rusnak, slovak, xrobak*) were omitted from the count since the -ki response was never used for them by any of the subjects.

Discussion of the k-stem real word clusterings

Our observations lead us to conclude that what may have seemed to be variation based on quantitative differences in the response patterns of the three subject groups is, in fact, variation due to differences of a qualitative nature. The discrepancies we witness with respect to the application of the "velar palatalization" pattern are the consequence of different divisions of the object space by the language speakers, based on differences in the division of the semantic space. (A possible interpretation that the different partitioning of the object space is phonologically motivated, such that items ending in *-ak* are opposed to those ending in *-ik* , does not find support in the data, since a mixture of both these items is found in Clusters 1 and 2 in the case of all three subject groups.)

Group II subjects (the majority of the community) exhibit a straightforward two-way division of the object space: on the one hand, there are the human nouns, which are palatalized in the nominative plural, and, on the other hand, the non-human, (including the inanimate) nouns, which are not palatalized in this environment. For this subject group the words ***bujak*** "bull," ***xrobak*** "worm," and ***unuk*** "grandson" are exceptions in their particular areas of the object space. (Palatalization of the word ***unuk*** by some speakers of this group can be seen, therefore, as a regularization, while attempts by others to extend palatalization to Cluster 2 words in general can be interpreted as further simplification of the overall pattern. On the other hand, the non-palatalization of the word ***unuk*** , i.e., its treatment as if it were an inanimate noun, may be interpreted as similar to that in other Western European languages, where grandchildren are often referred to by the pronoun "it.")

The oldest subjects and predominantly village residents in our sample (Group III) divide the object space into three parts. Two of these parallel the divisions exhibited by Group II speakers. The third area (Cluster 1b), an extension, in semantic terms, of the area marked [+human] (Cluster 1a), shows pattern connections to the area marked [+animate, -human] and [-animate] (Cluster 2). Within this third area both patterns overlap. We would interpret this area as one where the semantic determinants of the items, which link them to the area with Cluster 1a words, have been weakened, while the links based on phonological similarities with the area containing Cluster 2 words, have been strengthened.

The division of the object space adopted by Group I subjects resembles the division noted for Group III speakers with the difference that the middle area (Cluster 1b) has been enlarged. For both Group I and Group III speakers the item *unuk* no longer constitutes a lonely exception in Cluster 2, but is joined by other semantically similar items from Cluster 1a which now appear with the pattern of Cluster 2 items.

We can portray the interrelationship between the semantic (object) space and the response patterns of the three subject groups by using the following four terms: "semantic space 1" - items referring to human beings; "semantic space 2" - animate non-human and inanimate objects; "*-ci* pattern" - the "velar palatalization" pattern; "*-ki* pattern" - no palatalization. The resulting portrait of Group II would by and large be:

semantic space 1	semantic space 2
-ci pattern	*-ki* pattern

Group I and III, on the other hand, reveal the following interrelationship:

semantic space 1	semantic space 1	semantic space 2
-ci pattern	*-ci* pattern /*-ki* pattern	*-ki* pattern

Thus, whereas for Group II subjects the morphophonemic alternation pattern correlates rather straightforwardly with a semantic distinction, for Group I and III subjects a one-to-one correlation between the *-ci* pattern and human nouns exists only for some items. Other items within the same semantic domain fluctuate between the two patterns, or appear with the *-ki* pattern which is closely bound to another semantic domain.

The complexity of the interrelationship noted for Groups I and III vis-à-vis that for Group II helps explain the variation among Group I and III subjects in their treatment of Cluster 1b items. The complexity stems from the collision of two morphophonemic patterns within a single semantic domain. While the use of the *-ci* pattern with Cluster 1b items upholds the semantic connections they share with items in Cluster 1a, these connections are severed with the use of the *-ki* pattern, which is also applied to items of a different semantic domain. In the latter case, therefore, semantic connections between the items become superfluous. Thus, two patterns, which have different consequences for the semantic organization of the lexical items, are in competition with one another.

In our opinion, the variability in our data can be directly ascribed to this complex relationship. In the case of Group II, for example, where this relationship is clear and simple, variation is limited. Furthermore, we note that the variability of the affected items occurs on a subject-to-subject and item-to-item basis such that a given item is produced by an individual subject either with pattern 1, or with pattern 2, or with both patterns simultaneously.

The two schemes presented may be viewed as different conceptualizations of the linguistic system, i.e., two different norms, which coexist side-by-side in the speech community. Variability in the speech community, of the type found in our data, can be tolerated by all speakers qua listeners, since this variability is intelligible in terms of both norms.

Obviously, both norms are susceptible to change. In fact, from a diachronic point of view, upon which the norm for Group III is taken as the "original" one, the norms for both Groups I and II exemplify changes in the original conceptualization. These changes, it may be stressed, are logical extensions of the original norm: Group II has simplified it in one direction, while Group I has simplified it in the opposite direction, but in doing so has complicated the earlier norm.

A change in the Group II norm, which would result in its further simplification, would be the adoption of a single pattern throughout the entire semantic domain, yielding the semantic connections unnecessary. If the *-ci* pattern is adopted, the process of change would receive support from outside the linguistic system proper, namely, from a similar morphophonemic alternation evident in Serbo-Croatian, where it is not burdened by semantic considerations (see Chapter Four). Nothing in the norm for Group II prevents the opposite from taking place, i.e. the adoption of the *-ki* pattern. Both paths create initial complexity, which, in turn, generates variability.

Further changes in the norm for Group I are also possible and probable. The adoption of the norm for Group II would be a step in the direction of simplification. On the other hand, the extension of the *-ki* pattern, with a concurrent weakening of semantic considerations, would also lead to simplification. The ultimate course may be steered not only by purely linguistic forces, but also by extra-linguistic ones. The *-ci* pattern may prevail for the reason mentioned above (as well as for other reasons). On the other hand, the *-ki* pattern may gain in strength, particularly, if an emblematic function were bestowed on the language by its users for the purposes of highlighting the distinctive character of Rusyn. In view of the social make-up of Group I (younger-aged speakers, and males with higher education), considerations such as these seem perfectly admissible and may play a role in any further pattern changes.

At the present, however, we observe the existence of (at least) two norms within the speech community. Both are mutually interpretable, although one is more complex than the other. A consequence of this complexity is variability in speech production. And whereas one norm fosters a wide use of the "velar palatalization" pattern, the second norm restricts the application of this pattern. Thus, we can indeed speak of the existence of two opposing tendencies within the speech community with respect to "velar palatalization."

One final point needs to be made concerning the three diminutives on our list: *bracik* "brother," *kon'ik* "horse," and *stol'ik* "table." The suggestion by Comrie (1979:51) that morphophonemic alternations may be absent from certain classes of words, for example, diminutives, cannot be either fully confirmed or rejected on the basis of our data. On the one hand, the item *bracik* may indeed support this proposal, since it is never palatalized by any of the speakers despite meeting the semantic condition of humanness necessary for palatalization. On the other hand, the diminutives *kon'ik* and *stol'ik* , although also not palatalized by any significant number of speakers, do not meet the necessary conditions for palatalization. Hence, their inclusion into Cluster 2 is due not to their status as diminutives but to their semantic determinants. Thus, we do not have an adequate number of pertinent examples among the k-stem real words either to confirm or to refute Comrie's proposal.

The k-stem non-words

Our data on the k-stem real words demonstrate that for some words in the lexicon the probability that they will be palatalized in the nominative plural by speakers, irrespective of group membership, is very high. For the item *rusnak* "Rusyn," for example, there is unanimous consensus with regard to palatalization (Table 6.10). The other three items on our list marked [+ethnic group], are palatalized differentially by the three subject groups, with the strongest consensus exhibited for the item *slovak* (a member of an ethnic group which is a close neighbor of the Rusyns, e.g. the residents of a village neighboring RK are Slovaks), and diminishing for the other items (in seeming proportion to the increase in the geographical distance between the denoted ethnic group and the Rusyns). There are other items on our list which also show a high probablility of being palatalized by any given speaker of Rusyn.

Thus, since all speakers in our sample apply the "velar palatalization" pattern to at least some items in their lexicon, the logical question is - how productive is this pattern within the speech community? Our list of k-stem nouns included nine possible, but non-existent words which were differentiated on the basis of the same semantic features as were used for the real words. We turn now to the results of the RCA on the k-stem non-words for possible answers to the question of productivity.

Subject groups

A cluster analysis reveals three groups in our adult population, with each group exhibiting a distinct response pattern (Figure 5 in Appendix D). We refer to the subject groups as Group A, Group B, and Group C, and note that each group is approximately of equal size: Group A has 20 members, Group B has 23 members, and Group C includes 21 speakers. (A description of the membership of each group along the social axis is provided in Tables 6.13, 6.14, and 6.15.)

Similarly as with subject Groups I, II, and III (for real words), none of the subject groups for non-words mirrors the adult sample in all respects, while, at the same time, none of the groups is composed exclusively of a well-defined social segment. The most representative of the entire speech community is Group B. We do notice, however, that among speakers aged fifty and over there are more city residents and fewer village dwellers than in the adult sample in general (Table 6.17). In fact, in the oldest age group no RK resident is included. There is an imbalance in the RK membership for speakers under fifty, as well, namely, one female among six males.

In the case of Groups A and C their membership is more easily definable, since the groups have a more distinctive profile with regard to the social variables used. For Group A we note the predominance of the youngest speakers and the complete absence of the oldest ones. Upon closer scrutiny (Table 6.16), these speakers can be further differentiated not only with respect to "age," but also with respect to their "residence" and "gender." As with Group B, so with Group A we can oppose speakers who are under fifty to those over fifty years of age. In the latter group membership is defined along the "residence" variable - only NS residents are represented, and no RK speakers are included. Although in the younger age group we find residents of both places, the villagers outnumber their city counterparts. Moreover, village women are more numerous than village men.

Table 6.13: ADULT **SUBJECT GROUP A** (k-STEM NON-WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP A (n = 20)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**55%**	11			50%	32		
Males	**45%**	9			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**50%**	10	(7)	(3)	53%	34	(17)	(17)
NS	**50%**	10	(4)	(6)	47%	30	(15)	(15)
AGE								
20 - 29	**50%**	10	(4)	(6)	28.125%	18	(9)	(9)
30 - 39	**20%**	4	(3)	(1)	18.75%	12	(6)	(6)
40 - 49	**10%**	2	(2)	(0)	15.625%	10	(5)	(5)
50 - 59	**10%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**10%**	2	(1)	(1)	12.5%	8	(4)	(4)
70 & older	-	0	(0)	(0)	12.5%	8	(4)	(4)
EDUCATION								
higher	**45%**	9	(4)	(5)	44%	28	(11)	(17)
secondary	**35%**	7	(3)	(4)	25%	16	(5)	(11)
elementary	**20%**	4	(4)	(0)	31%	20	(16)	(4)

Table 6.14: ADULT **SUBJECT GROUP B** (k-STEM NON-WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP B			**(n = 23)**	ADULT SAMPLE			(n = 64)
	%	n			%	n		
GENDER								
Females	**47.8%**	11			50%	32		
Males	**52.1%**	12			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**43.4%**	10	(3)	(7)	53%	34	(17)	(17)
NS	**56.5%**	13	(8)	(5)	47%	30	(15)	(15)
AGE								
20 - 29	**17.39%**	4	(3)	(1)	28.125%	18	(9)	(9)
30 - 39	**21.73%**	5	(1)	(4)	18.75%	12	(6)	(6)
40 - 49	**17.39%**	4	(1)	(3)	15.625%	10	(5)	(5)
50 - 59	**13%**	3	(2)	(1)	12.5%	8	(4)	(4)
60 - 69	**17.39%**	4	(2)	(2)	12.5%	8	(4)	(4)
70 & older	**13%**	3	(2)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**47.8%**	11	(4)	(7)	44%	28	(11)	(17)
secondary	**17.3%**	4	(0)	(4)	25%	16	(5)	(11)
elementary	**34.7%**	8	(7)	(1)	31%	20	(16)	(4)

Table 6.15: ADULT **SUBJECT GROUP C** (k-STEM NON-WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP C (n = 21)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**47.6%**	10			50%	32		
Males	**52.3%**	11			50%	32		
RESIDENCE			(Fem)	(Males)			(Fem)	Males
RK	**66.6%**	14	(7)	(7)	53%	34	(17)	(17)
NS	**33.3%**	7	(3)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**19%**	4	(2)	(2)	28.125%	18	(9)	(9)
30 - 39	**14.3%**	3	(2)	(1)	18.75%	12	(6)	(6)
40 - 49	**19%**	4	(2)	(2)	15.625%	10	(5)	(5)
50 - 59	**14.3%**	3	(1)	(2)	12.5%	8	(4)	(4)
60 - 69	**9.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
70 & older	**23.8%**	5	(2)	(3)	12.5%	8	(4)	(4)
EDUCATION								
higher	**38%**	8	(3)	(5)	44%	28	(11)	(17)
secondary	**24%**	5	(2)	(3)	25%	16	(5)	(11)
elementary	**38%**	8	(5)	(3)	31%	20	(16)	(4)

Table 6.16: DISTRIBUTION OF ADULT **SUBJECT GROUP A** (k-STEM NON-WORDS)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP A (n = 20)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	3	3	1	3	4	4	5	5
30-39	2	-	1	1	4	4	2	2
40-49	2	-	-	-	3	3	2	2
(sub-total$_1$)	(7 +	3=10)	(2 +	4 = 6)	(11 +	11=22)	(9 +	9 = 18)
%	**50%**		**30%**		34.4%		28.1%	
50-59	-	-	1	1	2	2	2	2
60-69	-	-	1	1	2	2	2	2
70 +	-	-	-	-	2	2	2	2
(sub-total$_2$)	(0 +	0 = 0)	(2 +	2 = 4)	(6 +	6=12)	(6 +	6 = 12)
%	**0**		**20%**		18.75%		18.75%	
(Total)	(7 +	3=10)	(4 +	6=10)	(17 +	17=34)	(15 +	15=30)
%	50%		50%		53%		47%	

Whereas city residents are dominant, to a greater or lesser degree, among speakers over fifty in Groups A and B, the opposite is true for Group C. Here speakers who are over fifty are almost exclusively village residents (Table 6.18). Moreover, the highest proportion of speakers of Group C fall into the oldest age group, dominated, as expected,

Table 6.17: DISTRIBUTION OF ADULT **SUBJECT GROUP B** (k-STEM NON-WORDS)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP B (n = 23)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	-	1	3	-	4	4	5	5
30-39	1	3	-	1	4	4	2	2
40-49	-	2	1	1	3	3	2	2
(sub-total1)	(1 +	6 = 7)	(4 +	2 = 6)	(11 +	11=22)	(9 +	9 = 18)
%	**30.4%**		**26.1%**		34.4%		28.1%	
50-59	1	-	1	1	2	2	2	2
60-69	1	1	1	1	2	2	2	2
70 +	-	-	2	1	2	2	2	2
(sub-total2)	(2 +	1 = 3)	(4 +	3 = 7)	(6 +	6=12)	(6 +	6 = 12)
%	**13%**		**30.4%**		18.75%		18.75%	
(Total)	(3 +	7=10)	(8 +	5=13)	(17 +	17=34)	(15 +	15=30)
%	43.4%		56.5%		53%		47%	

by residents of RK. On the other hand, group C members under fifty parallel the speaker distribution in the adult sample quite well.

The variables "age," "residence," and "gender," although still not sufficient to exclusively describe the composition of any one of the three subject groups for non-words, have assumed a stronger role than was seen in the case of the subject groupings for real

Table 6.18: DISTRIBUTION OF ADULT **SUBJECT GROUP C** (k-STEM NON-WORDS)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP C (n = 21)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	1	-	1	2	4	4	5	5
30-39	1	1	1	-	4	4	2	2
40-49	1	1	1	1	3	3	2	2
(sub-total1)	(3 +	2 = 5)	(3 +	3 = 6)	(11 +	11=22)	(9 +	9 = 18)
%	**23.8%**		**28.5%**		34.4%		28.1%	
50-59	1	2	-	-	2	2	2	2
60-69	1	1	-	-	2	2	2	2
70 +	2	2	-	1	2	2	2	2
(sub-total2)	(4 +	5 = 9)	(0 +	1 = 1)	(6 +	6=12)	(6 +	6 = 12)
%	**42.8%**		**4.8%**		18.75%		18.75%	
(Total)	(7 +	7=14)	(3 +	4 = 7)	(17 +	17=34)	(15 +	15=30)
%	66.6%		33.3%		53%		47%	

words. The variable "education," on the other hand, does not seem to play an important role in influencing the make-up of the subject groups for non-words. We can say that, in comparison with groupings for real words, the non-word groupings have pulled together subjects who are more similar with regard to the first three social variables. The variables themselves for the three non-word groupings appear as if in a hierarchical order. Foremost is the variable of "age" which opposes speakers under fifty to those who are over fifty years old. For the older age grouping the variable of "residence" plays a distinctive role. For speakers under fifty who are from RK the additional variable of "gender" emerges as important.

To recapitulate briefly, Group A is the youngest group, with fewer speakers over fifty than in the general population, and none in the oldest age grouping. In the under fifty group the RK females outnumber the males, whereas speakers over fifty are all NS residents. In Group B the speakers under fifty are more or less evenly divided between RK and NS, but the RK subjects are almost all males. Among the older speakers we find more NS residents. Group C speakers under fifty generally parallel the distribution in the overall sample. But Group C speakers over fifty are all RK residents, with one exception in the oldest age grouping.

The k-stem non-word and the k-stem real word subject groups

As one would expect, similarities in the social make-up of the subject groups for non-words and those for real words exist, even if there is no complete overlapping (Table 6.19). Thus, we note parallels between Group C and Group III, particularly with respect to speakers of Group C who are over fifty. In both groups, RK residents are in the majority. The predominance of NS residents among speakers over fifty, which we noted for Groups A and B, is also characteristic of Group II. However, the opposition of RK females to RK males noted for Group A and B speakers under fifty has no direct parallel in the real word subject groups, although in Group I males with higher education constituted half of the group membership.

When we compare the distribution of the adult subjects within the real word groups as opposed to the non-word groups (Table 6.20) we see that the noted similarities do, to some extent, serve as predictors of group membership. Thus, the majority of Group III speakers do indeed appear in Group C. The two speakers who join Group A are both in the

Table 6.19: OVERVIEW OF ADULT SUBJECT GROUPS FOR REAL WORDS AND NON-WORDS

Real Word Subject Groups	Non-Word Subject Groups
Group I - younger speakers - more males with higher education	Group A - youngest speakers dominate under fifty: - more RK females over fifty: - only NS residents - no speakers 70+
Group II under fifty: - parallel adult sample over fifty: - more NS	Group B under fifty: - for RK - mostly males over fifty: - more NS
Group III mostly RK residents and oldest speakers	Group C under fifty: - parallel adult sample over fifty: - mostly RK residents

youngest age bracket, while the three who join Group B are females of different ages. Group II, with shared similarities to Groups A and B, does indeed supply most of the members of these two non-word groups. Group I, in its social structure, is not comparable in the same general fashion with the subject groups for non-words. The main characteristics of this group are younger speakers, and males with higher education. The two speakers of Group I who join Group A (dominated by the youngest speakers) are

Table 6.20: DISTRIBUTION OF ADULT SUBJECTS ON THE BASIS OF THEIR RESPONSES TO REAL WORDS VS. NON-WORDS

Subject Groups: Real Words*	Subject Groups: Non-Words**			
	A	B	C	
I	(2) **12.5%** 10%	(7) **43.75%** 30%	(7) **43.75%** 33%	(n = 16)
II	(16) **47%** 80%	(13) **38%** 57%	(5) **15%** 24%	(n = 34)
III	(2) **14.3%** 10%	(3) **21.4%** 13%	(9) **64.3%** 43%	(n = 14)
	(n = 20)	(n = 23)	(n = 21)	N = 64

* The distribution of subjects of Groups I, II, and III on the basis of their responses to non-words is provided in **bold** type on a horizontal reading of the cells.

** The distribution of subjects of Groups A, B, and C on the basis of their responses to real words is provided in normal type on a vertical reading of the cells.

indeed in the youngest age bracket. The remaining members of Group I divide evenly between Groups B and C. Of the seven who join Group B, six are males, and of these four are RK residents.

We can conclude that parallels in the distribution of subjects within the social matrix for real word groups, on the one hand, and the non-word groups, on the other, do exist, even though they do not correspond in every respect. The logical question which emerges from this conclusion is - do these parallels in the social distribution of the subjects also indicate a resemblance between the response patterns they produce for the real words and those they use for the non-words? We address this question next in our discussion.

Object clusterings [1]

In their treatment of the k-stem non-words the three subject groups exhibit three distinct response patterns (Tables 6.21, 6.22, and 6.23), which not only bear a resemblance, but indeed sharpen the contours of patterns encountered for the k-stem real words. Moreover, the response patterns for the non-words lend support to our description of the conflicting norms within the speech community, with regard to the k-stem masculine nouns, and the present and future dynamics of these norms.

A quick overview of the three response patterns reveals that, whereas subjects of Groups A and B apply, albeit differentially, "velar palatalization" to non-words, subjects of Group C make virtually no use of this pattern. For subjects of Groups A and B the use of "velar palatalization" is guided by semantic considerations, although each group imposes different restrictions on the semantic (object) space.

The most extensive use of "velar palatalization" is made by speakers of Group A. The majority of speakers apply palatalization to the items in Cluster 1a which refer to animate beings. Heading the list, however (when all possible *-ci* responses are considered), are items referring to humans. Of these, the item *hunak* "inhabitant of the city 'Hun' in China," marked also as [+ethnic group], produces the highest consensus as to palatalization. The two items *gl'inak* "small mud animal, native to China" and *kožak* "bird, native to Mexico," marked [+animate, -human], show an increase in the *-ki* pattern: slight in the case of the former, somewhat more conspicuous in the case of the latter.

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[1] A cluster analysis of the non-words was unsuccessful because of the low number of items. The clustering was, therefore, done manually.

The use of palatalization by the speakers of Group A decreases with Cluster 1b and Cluster 2 items, while the use of the *-ki* pattern increases. The item *kempik* "small camping vehicle" of Cluster 2, denoting an inanimate object, shows the highest consensus as to no-palatalization, while *saturn'ik* "rocket circling Saturn," bearing the same semantic features, has the group divided on the palatalization issue.

Cluster 1b items *forok* "small boy in African tribe" and *ažik* "small boy, helper of Arab sheikh" elicit three types of responses: in addition to the responses *-ci* and *-ki*, we also note the use of the *-kove* response. If we consider that the referents of these items are non-adult human beings, then the parallel with the real word *bracik* can be drawn. Under such conditions, the *-ki* and the *-kove* responses become an established alternative to the *-ci* pattern.

The response pattern outlined for Group A is produced, with individual variants, by all members of this group except two, namely, two speakers in the youngest age bracket who are members of Group I for the real words. These two speakers show a preference for *-ki* and *-kove* responses and are, thus, not typical members of Group A. The majority of Group A subjects (16) are members of Group II for the real words, and only two speakers (both RK residents in the youngest age bracket) belong to Group III.

Group B speakers restrict the "velar palatalization" pattern to the two items *hunak* and *požak* "inhabitant of the 'Pož' river valley in China" which denote human beings of a specific provenance and have been classified by us as bearing the semantic feature [+ethnic group]. But compared with the responses produced for these two items by Group A

Table 6.21: OBJECT CLUSTERS (k-STEM NON-WORDS) FOR ADULT **SUBJECT GROUP A**
(n = 20)

Cluster	Item	RESPONSES -ci	-ki	-ci/-ki	-kove	Other
1a	hunak	90%	5%	0	0	5% ci/kove
	požak	80%	0	10%	0	10% ci/kove;ki/kove
	tundak	85%	5%	5%	5%	0
	gl'inak	85%	15%	0	0	0
	kožak	60%	30%	10%	0	0
1b	forok	40%	30%	5%	25%	0
	ažik	30%	30%	10%	30%	0
2	saturn'ik	45%	50%	5%	0	0
	kempik	15%	75%	0	5%	5% ki/kove

Table 6.22: OBJECT CLUSTERS (k-STEM NON-WORDS) FOR ADULT **SUBJECT GROUP B**
(n = 23)

Cluster	Item	RESPONSES -ci	-ki	-ci/-ki	-kove	Other
1	hunak	47.82%	8.69%	43.47%	0	0
	požak	47.82%	21.73%	30.43%	0	0
2	tundak	17.39%	69.56%	13.04%	0	0
	gl'inak	17.39%	73.91%	8.69%	0	0
	kožak	13.04%	82.6%	4.34%	0	0
	forok	4.34%	82.6%	4.34%	4.34%	4.34% ki/kove
	ažik	0	86.95%	0	4.34%	8.69% ki/kove
	saturn'ik	8.69%	86.95%	4.34%	0	0
	kempik	0	100%	0	0	0

Table 6.23: OBJECT CLUSTERS (k-STEM NON-WORDS) FOR ADULT **SUBJECT GROUP C**

(n = 21)

		RESPONSES				
Cluster	Item	-ci	-ki	-ci/-ki	-kove	Other
1	hunak	0	100%	0	0	0
	kožak	0	100%	0	0	0
	kempik	0	100%	0	0	0
	forok	0	95.23%	0	0	4.76% kanci
	ažik	0	90.47%	0	4.76%	4.76% ki/kove
	gl'inak	9.52%	90.47%	0	0	0
	saturn'ik	9.52%	85.71%	4.76%	0	0
	požak	9.52%	85.71%	4.76%	0	0
	tundak	14.28%	85.71%	0	0	0

speakers, who exhibit strong agreement with respect to the *-ci* pattern, only half of Group B speakers follow this path, while the other half produce a double version of these items - one with, the other without palatalization.

The other items on the non-word list are generally not palatalized by Group B speakers. The few deviations from this pattern observe the semantic progression from [+animate] to [-animate] noted throughout our data. The item *kempik* elicits complete agreement among Group B subjects as to no-palatalization. Only three speakers produce a palatalized version of *saturn'ik* , which, like *kempik* , is marked [-animate] . All three speakers are NS women: two from Group II and one from Group III for the real words.

With respect to the two items *forok* and *ažik* , which refer to non-adult human beings, there is strong agreement among Group B subjects not to palatalize these items. Moreover, among the non-words, only *forok* and *ažik* are produced with the *-kove* response. The overriding consideration with respect to these items, therefore, seems to be not the feature [+human] , but rather the specification of a "non-adult" human being.

The majority of the members of Group B are drawn from Group II for the real words, while a third come from Group I. Only three speakers, all three females, who join Group B are members of Group III for the real words.

Whereas, as mentioned earlier, most of Group III members join Group C, they are not the only speakers in this group. Thus, Group I speakers account for a third of the membership of Group C, while respondents of Group II comprise about one fourth of its members. In their treatment of the non-words, speakers of Group C do not resort to the "velar palatalization" pattern. Instead the items are produced with the *-ki* pattern, and no differentiation of the semantic (object) space is evident.

Group C members are remarkably consistent in their avoidance of the *-ci* pattern. The first five items in Cluster 1 are never produced in a palatalized form by any Group C speaker. A few exceptions occur only with the last four items. Although these are marginal, it is interesting to note that they are produced by speakers, who are either members of Group II for the real words, or by females.

Discussion of the k-stem non-word and the k-stem real word clusterings

The response patterns for the k-stem non-words, as those for the k-stem real words, demonstrate the important, although variable, role of meaning in the use of "velar palatalization." The differences in the response patterns stem from differences in the division of the semantic (object) space, which create different interdependencies between the semantic space and the pattern associated with it.

In our discussion of the k-stem real words we presented, in schematic form, the interrelationship between the semantic space and the patterns used, defining, as it was, two norms within the speech community (see pg. 134). Since the response patterns produced for the non-words are directly relatable to the outlined norms, we present these again labelling them as "norm 1" and "norm 2" (where norm 1 is characteristic of Group II members, wheareas norm 2 applies to speakers of Groups I and III for real words):

norm 1:		semantic space 1 *-ci* pattern	semantic space 2 *-ki* pattern
norm 2:	semantic space 1 *-ci* pattern	semantic space 1 *-ci* pattern /*-ki* pattern	semantic space 2 *-ki* pattern

The treatment of the non-words by Group A subjects emerges from norm 1, and demonstrates the inner conflicts within this norm which make it vulnerable to change. In general the division between semantic space 1 (human nouns) and semantic space 2 (non-human animate, as well as inanimate nouns) is adhered to.

Within semantic space 1, however, the items *forok* "small boy in African tribe" and *ažik* "small boy, helper of Arab sheikh" are seen as exceptions by some speakers of Group A, since they are not palatalized, despite referring to human beings. Although it may be argued that these speakers reflect norm 2 (where the *-ki* pattern competes with the *-ci* pattern for items within semantic space 1), for some speakers at least these two items may indeed constitute exceptions within semantic space 1, parallel to the real word *bracik* "brother"$_{\textit{dimin.}}$ and the no-palatalization pattern is otherwise reserved for items within semantic space 2. Further support for this view comes from the observation that, in addition to the *-ki* pattern, the *-kove* response, applied to the word *bracik*, is also used with *forok* and *ažik*. In other words, *forok* and *ažik*, like *bracik*, are allocated a separate status within norm 1.

The items *gl'inak* "small mud animal, native to China" and *kožak* "bird, native to Mexico," which belong to the domain of semantic space 2, being marked [+animate, -human], are nonetheless produced by many speakers of Group A with the *-ci* pattern. On the one hand, we may say that these speakers treat *gl'inak* and/or *kožak* as exceptions within semantic space 1, resembling the treatment accorded such real words as *bujak* "bull" and *xrobak* "worm." In that case, norm 1 remains intact, burdened, as it were, with several irregularities. On the other hand, the use of the *-ci* pattern with *gl'inak* and *kožak* may be interpreted as an extension of this pattern into semantic space 2, constituting a first step in the simplification of norm 1 through the obliteration of semantic connections between the items, and the imposition of a single pattern, in this case, "velar palatalization." It is interesting to note, that almost all speakers who palatalize both *gl'inak* and *kožak* also palatalize either *forok* or *ažik* or both. Thus, regularization of the norm goes hand-in-hand with its simplification.

The process of simplification has been carried to its fullest by several speakers of Group A who have adopted a single pattern for all items, including *saturn'ik* and *kempik*, marked [-animate]. The pattern adopted is the *-ci* pattern. The division of the semantic space has been eliminated, and the meaning of the items in the formation of the nominative plural has been rendered irrelevant.

We conclude, that the speakers of Group A do indeed adhere to norm 1. Their slight deviations, and the tendency demonstrated by some to regularize and simplify this norm do not lean in the direction of norm 2, which promotes the expansion of the *-ki* pattern, but move rather in the opposite direction, towards an expansion of the *-ci* pattern throughout the semantic domain.

And finally a brief look again at Group A speakers. We note that the predominant majority of them come from Group II, for which norm 1 was also the ascribed norm. Thus, in their treatment of the real words, as well as the non-words, Group A speakers adhere to the same norm, within which the "velar palatalization" pattern is evident throughout a large part of the lexicon. That the "velar palatalization" pattern is applied to the non-words with the same intensity as to the real words, is an indication that for speakers of Group A this pattern is a viable, i.e., a productive morphophonemic process.

Whereas Group A speakers are inclined to readily use and even expand the *-ci* pattern, the opposite is true for speakers of Groups B and C. Here we note a predilection for the *-ki* pattern, as a result of which, the *-ci* pattern is restricted to two items in the case of Group B, and virtually abolished in the case of Group C. Thus, in the case of the non-words we observe the same two opposing tendencies within the speech community which we noted in the case of the real words with regard to "velar palatalization."

For speakers of Group B the "velar palatalization" pattern is still a viable process, but within a very restricted semantic domain. The two non-words *hunak* "inhabitant of the city 'Hun" in China" and *požak* "inhabitant of the 'Pož' river valley in China" produced with the *-ci* pattern, parallel in their semantic make-up such real words as *rusnak* , *slovak* , *pol'ak* , i.e., nouns referring to members of ethnic groups, which were among the most frequently palatalized real words. Exactly these same two non-words elicited the highest agreement among Group A speakers with regard to the *-ci* pattern. We must conclude, therefore, that it is the meaning of such nouns that binds them strongly to the *-ci* pattern, even under conditions where the competing *-ki* pattern has made significant inroads. Their meaning sets them off in the class of human nouns, and this, in turn, permits them to maintain their unique characteristics at a time when these characteristics are being lost by the entire class. (Our designation of [+member of ethnic group] may not the best one for these nouns, and is intended to underscore their distinctiveness within the general class of human nouns.)

Since speakers of Group C make virtually no use of the "velar palatalization" pattern, we must conclude that for them it is not a viable, i.e., not a productive process. For Group A and Group B speakers, on the other hand, "velar palatalization" is a productive pattern, even though the productivity is relative. If we set the two groups side by side, we might conclude that, in comparison with Group A speakers, "velar palatalization" is almost unproductive for Group B speakers. But if Group B speakers are taken on their own merit, we must then concede, that with regard to items marked [+ethnic group] , the "velar palatalization" pattern is indeed productive for them, although less consistently so than for Group A speakers. We conclude from this, that the differences in productivity are not merely differences in degree of productivity, although these are evident as well. They are instead an indication of substantive differences between the groups with respect to the domain of application of the "velar palatalization" pattern. These differences can be accommodated within both norms, although the competing orientations, which lie at the core of these differences, pull in opposite directions.

Whereas we related the response pattern of Group A to norm 1, the response patterns of Groups B and C can be related to both norm 1 and 2. Norm 2 quite accurately mirrors the response pattern of Group B, while in the case of Group C we observe an additional step being made within this norm leading towards its full simplification. With regard to norm 1, however, neither of the two groups can be said to reflect this norm in its original form. But one possible simplification of norm 1 is the adoption of norm 2, and this norm, as mentioned, is adopted by speakers of Group B.

For the real word subject groups, norm 1 was adhered to by speakers of Group II, while norm 2 reflected the patterns of Groups I and III. It is, therefore, not surprising that speakers of Groups I and III join Groups B and C for the non-words, and in so doing continue to follow norm 2 - either fully, or with further simplifications. Speakers of Group II, reflecting norm 1, on the other hand, divide almost evenly between Groups A and B. In joining Group A they preserve norm 1, or simplify it in favor of the *-ci* pattern, while in joining Group B they simplify norm 1 in the opposite direction, namely, in favor of the *-ki* pattern (resulting in norm 2). We note that the number of Group II speakers who join Group C (the fullest simplification of norm 2 in favor of the *-ki* pattern) is low, indicating perhaps that simplification of the norm (in this case norm 1) proceeds in small jumps, not in big leaps.

In summing up our discussion, we can state that through the use of non-words in our experiment we were indeed able to gain an insight into the inner dynamics of the "velar palatalization" pattern which determine its strength, and thus productivity. We discovered that one and the same pattern can be productive for some members of the speech community and unproductive for other members. Differences exist even in cases where the pattern is productive - differences not only in degree of productivity, but also substantive differences resulting from different conceptualizations of the sphere of application of the pattern. These differences bear out the important, but variable, role of meaning for the "velar palatalization" pattern, and simultaneously suggest diverse models of lexical organization for the various speakers.

The response patterns for the non-words confirmed that, with regard to the "velar palatalization" pattern, there indeed exist two opposing tendencies within the speech community, one enhancing its use, the other restricting it. Both of these tendencies emerge from two norms, which can coexist since they are mutually intelligible. Within both norms ample opportunities are provided for the use of the "velar palatalization" pattern.

But although we observed much similarity in the treatment of the real words and the non-words, coupled with similarities in the social composition of the respective subject groups, leading to the conclusion that the speakers quite consistently adhere to their speech norm in both cases, nonetheless, the performance on the real words alone was not sufficient to fully predict the performance on the non-words. The splitting of Group II members between Groups A and B is a case in point, as is the unproductiveness of the "velar palatalization" pattern for Group C members. Both cases made clear that the use of the "velar palatalization" pattern, even with a substantial number of items, is no guarantee of the productiveness of this pattern. Moreover, the splitting of Group II showed that even the identical use of the pattern, i.e., with the same number of items, by various speakers cannot be a foolproof guarantee that the pattern is equally productive for all of the speakers.

Thus, we are led to conclude that speakers who perform similarly on real words may indeed have differently organized lexica, resulting from different conceptualizations of the linguistic system, which, in turn, create differences in pattern productivity. In fact, our data lead us to believe that there are as many conceptualizations of the linguistic system, i.e., norms, as there are language users. This means that a multitude of norms exist side-by-side within the speech community, which we decribed in general terms as "norm 1" and "norm 2", but which fit these two general norms to a greater or lesser extent.

Furthermore, with respect to the question of productivity, our results suggest that simple item counts (type frequency) may not be a sufficient means to distinguish between productive and unproductive patterns. Items of certain, possibly even small, semantic classes (with low type frequency), which are of special significance to the language users (and, therefore, possibly have high token frequencies) may also influence the productivity of a morphophonemic pattern.

One final point needs to be made in reference to the proposal made by Comrie about the possible immunity of certain word classes, e.g. diminutives, to morphophonemic alternations. Although our list of non-words contained no items, which we specifically labelled as diminutives, nonetheless, the two items *forok* and *ažik* , referring to non-adult human beings, could have been interpreted by some of our informants as diminutives. We observed the frequent use of the *-ki* and the *-kove* patterns with these items by speakers who otherwise used the *-ci* pattern for human nouns, e.g. Group A speakers, suggesting to us that these items were treated analogously to *bracik* , a diminutive noun, which also was produced with these endings. Where this analogy was indeed made, and the *-ki* and *-kove* responses were a direct result of it, then Comrie's proposal certainly gains some more evidence in its favor. Although we strongly suspect that this indeed was the case in the instances mentioned, we, nevertheless, feel that some more data would be necessary (e.g. items where there would be no question as to their status as diminutives) to fully confirm Comrie's proposal.

The non-adult sample

The k-stem real and non-words

The items on the short questionnaire prepared for the non-adult informants were a subset of the items contained on the long questionnaire for the adults. The non-adult questionnaire included 21 k-stem real words. The semantic differentiation of these items was identical to the one used on the long questionnaire. The short version of the questionnaire included also the same 9 k-stem non-words which appeared on the adult questionnaire. The responses of the non-adult subjects to both the real word and the non-word stimuli were analyzed jointly.

Subject groups

A cluster analysis reveals three strategy groups among the 37 non-adult informants. The first two groups link with each other at a value of 1.818, while the third group links with the rest of the population at a value of 4.546 (Figure 6 in Appendix D). The high values indicate that each group presents a distinct response pattern. We refer to the non-adult groups as Group 1, Group 2, and Group 3. Group 1 consists of 11 youths, Group 2 has 10 members, and Group 3 includes 16 subjects.

Comparing the three groups (Tables 6.24, 6.25, and 6.26), we note that the age of the subjects is an important factor in determining their group membership. In Group 1 the youngest speakers in grades 1 - 4 are in the majority, while the majority of Group 2 and Group 3 subjects are drawn from grades 5 - 8 and 9 - 12 respectively.

Despite the importance of the age variable, however, the non-adult groups are not merely age groupings. In each group speakers of all three age levels are present, even if some levels are under-represented, indicating that the age variable is not equally important for all subjects. This is particularly evident in the case of the six youngest boys (grades 1 - 4) in our sample. Three of them appear in Group 1, the other three join Group 3. Group membership for them is coextensive with their place of residence - the three youngest boys

Table 6.24: NON-ADULT **SUBJECT GROUP 1** (k-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 1 (n = 11)				TEEN SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**54.54%**	6			51.35%	19		
Males	**45.45%**	5			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**54.54%**	6	(2)	(4)	48.64%	18	(9)	(9)
NS	**45.45%**	5	(4)	(1)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**63.63%**	7	(4)	(3)	32.43%	12	(6)	(6)
5 - 8	**27.27%**	3	(1)	(2)	35.13%	13	(7)	(6)
9 - 12	**9%**	1	(1)	(0)	32.43%	12	(6)	(6)

Table 6.25: NON-ADULT **SUBJECT GROUP 2** (k-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2 (n = 10)				TEEN SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**50%**	5			51.35%	19		
Males	**50%**	5			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**50%**	5	(2)	(3)	48.64%	18	(9)	(9)
NS	**50%**	5	(3)	(2)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**20%**	2	(2)	(0)	32.43%	12	(6)	(6)
5 - 8	**50%**	5	(2)	(3)	35.13%	13	(7)	(6)
9 - 12	**30%**	3	(1)	(2)	32.43%	12	(6)	(6)

Table 6.26: NON-ADULT **SUBJECT GROUP 3** (k-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 3 (n = 16)				TEEN SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**50%**	8			51.35%	19		
Males	**50%**	8			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**43.75%**	7	(5)	(2)	48.64%	18	(9)	(9)
NS	**56.25%**	9	(3)	(6)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**18.75%**	3	(0)	(3)	32.43%	12	(6)	(6)
5 - 8	**31.25%**	5	(4)	(1)	35.13%	13	(7)	(6)
9 - 12	**50%**	8	(4)	(4)	32.43%	12	(6)	(6)

in Group 1 are village residents, while the three youngest boys in Group 3 live in the city. The youngest girls, on the other hand, are distributed between Groups 1 and 2, but not on the basis of their place of residence.

We make a futher observation about several speakers in Groups 1 and 3 which does not relate to their age. In Group 1 we note three members of the same family - a sister and a brother in the grade level 5 - 8, and an older sister in the grade level 9 - 12. They are city residents. The children's father, an NS male with higher education, was also one of our informants - a member of the adult subject Groups I and C. We find two family members also in Group 3 - a brother and a sister from Novi Sad. The boy is in the youngest age grouping, being in grade 3, and the sister, an 11th grader, is in the oldest age grouping.

Thus, the three non-adult subject groups indeed have some characteristics of age groups, but they are not exclusively that. In each group all age levels are represented, at least minimally. Furthermore, in the case of the youngest boys in our sample, not their age, but their place of residence determines their group membership: the village boys appear in Group 1, while the city boys are members of Group 3. We note also two instances where family members of different ages are grouped together, namely, in Groups 1 and 3. We can assume that for these speakers the family environment may exert the main influence on their speech performance.

Object clusterings

The response patterns of the non-adult subjects (Tables 6.27, 6.28, and 6.29) reveal a progressive increase in the use of the "velar palatalization" pattern from Group 1 through Group 3. Where Group 1 subjects restrict this pattern basically to three items, Group 2 and 3 speakers make much more abundant use of it. For some speakers of the last group "velar palatalization" is even the predominant pattern, used with almost all of the items. At the same time, one notes that Group 3 subjects produce the most varied array of responses to

Table 6.27: OBJECT CLUSTERS (k-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**

(n=11)

		RESPONSES				
Cluster	Item*	-ci	-ki	-ci/-ki	-kove	Other
1	rusnak	90.9%	9.09%	0	0	0
	slovak	63.63%	36.36%	0	0	0
	pol'ak	45.45%	54.54%	0	0	0
	xrobak	35.35%	54.54%	9.09%	0	0
	bratn'ak	18.18%	54.54%	18.18%	9.09%	0
	turok	18.18%	72.72%	0	0	9.09% NR
	vojak	18.18%	81.81%	0	0	0
	robotn'ik	18.18%	81.81%	0	0	0
	požak	18.18%	81.81%	0	0	0
2	junak	18.18%	81.81%	0	0	0
	žobrak	9.09%	90.9%	0	0	0
	bujak	9.09%	90.9%	0	0	0
	unuk	9.09%	90.9%	0	0	0
	gl'inak	9.09%	90.9%	0	0	0
	rak	0	90.9%	0	9.09%	0
	bracik	0	100%	0	0	0
	dzijak	0	100%	0	0	0
	šl'imak	0	100%	0	0	0
	kon'ik	0	100%	0	0	0
	ručn'ik	0	100%	0	0	0
	slovn'ik	0	100%	0	0	0
	stol'ik	0	100%	0	0	0
	kurn'ik	0	100%	0	0	0
	hunak	0	100%	0	0	0
	forok	0	100%	0	0	0
	ažik	0	100%	0	0	0
	tundak	0	100%	0	0	0
	kožak	0	100%	0	0	0
	kempik	0	100%	0	0	0
	saturn'ik	0	100%	0	0	0

* Non-words are printed in **bold** type.

Table 6.28: OBJECT CLUSTERS (k-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**

(n=10)

		RESPONSES				
Cluster	Item	-ci	-ki	-ci/-ki	-kove	Other
1a	pol'ak	100%	0	0	0	0
	rusnak	100%	0	0	0	0
	slovak	100%	0	0	0	0
	bratn'ak	90%	10%	0	0	0
	žobrak	80%	10%	10%	0	0
	turok	80%	20%	0	0	0
	bujak	80%	20%	0	0	0
	junak	70%	30%	0	0	0
	vojak	70%	30%	0	0	0
1b	xrobak	50%	50%	0	0	0
	robotn'ik	40%	60%	0	0	0
	požak	40%	60%	0	0	0
	unuk	30%	70%	0	0	0
	forok	30%	70%	0	0	0
	hunak	20%	60%	20%	0	0
	kožak	20%	80%	0	0	0
	gl'inak	20%	80%	0	0	0
2	**saturn'ik**	10%	90%	0	0	0
	bracik	0	90%	0	10%	0
	dzijak	0	90%	0	10%	0
	ažik	0	90%	0	10%	0
	rak	0	90%	0	10%	0
	šl'imak	0	100%	0	0	0
	kon'ik	0	100%	0	0	0
	ručn'ik	0	100%	0	0	0
	slovn'ik	0	100%	0	0	0
	stol'ik	0	100%	0	0	0
	kurn'ik	0	100%	0	0	0
	tundak	0	100%	0	0	0
	kempik	0	100%	0	0	0

Table 6.29: OBJECT CLUSTERS (k-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 3**

(n=16)

		RESPONSES				
Cluster	Item	-ci	-ki	-ci/-ki	-kove	Other
1a	rusnak	100%	0	0	0	0
	slovak	100%	0	0	0	0
	bratn'ak	100%	0	0	0	0
	bujak	100%	0	0	0	0
	pol'ak	93.75%	6.25%	0	0	0
	turok	93.75%	6.25%	0	0	0
	žobrak	93.75%	6.25%	0	0	0
	požak	93.75%	0	0	6.25%	0
	vojak	93.75%	0	0	0	6.25% NR
	xrobak	87.5%	12.5%	0	0	0
	hunak	87.5%	12.5%	0	0	0
	junak	81.25%	6.25%	0	0	12.5% NR
	dzijak	68.75%	18.75%	6.25%	6.25%	0
1b	robotn'ik	68.75%	18.75%	0	6.25%	6.25% ci/kove
	kožak	68.75%	25%	6.25%	0	0
	gl'inak	68.75%	31.25%	0	0	0
	tundak	62.5%	31.25%	0	6.25%	0
	unuk	43.75%	37.5%	0	0	18.75%ci/kove; čata; NR
	forok	31.25%	50%	0	12.5%	6.25% ki/kove
	bracik	0	37.5%	0	56.25%	6.25% NR
2	šl'imak	31.25%	56.25%	0	0	12.5%ki/kove;NR
	kurn'ik	25%	62.5%	0	6.25%	6.25% NR
	ažik	25%	68.75%	0	6.25%	0
	kon'ik	12.5%	75%	0	12.5%	0
	saturn'ik	18.75%	81.25%	0	0	0
	kempik	12.5%	81.25%	0	6.25%	0
	slovn'ik	0	81.25%	6.25%	6.25%	6.25% NR
	stol'ik	6.25%	87.5%	0	6.25%	0
	ručn'ik	6.25%	93.75%	0	0	0
	rak	0	93.75%	0	6.25%	0

the k-stem items of all the non-adults in the sample. (The results of the cluster analyses tabulated separately for each group appear as Figures 7, 8, and 9 in Appendix D.)

Focusing on Group 1, we see that the three real words referring to members of ethnic groups: *rusnak* , *slovak* and *pol'ak* , elicit the highest number of *-ci* responses, followed next by the word *xrobak* "worm," marked [+animate, -human] . These words are produced also with the *-ki* response, but, at least in the case of the first three words, the no-palatalization pattern is used only by the youngest speakers - first and second graders.

For the remaining items on the list the no-palatalization pattern, requiring no change in the stem-final consonant, is the preferred pattern. There are only a few exceptions to this general trend. For example, the oldest informant in the group, an NS female, who is one of the three siblings mentioned earlier, as well as her younger brother use the *-ci* pattern somewhat more extensively with Cluster 1 items and the first few items in Cluster 2, surpassed in this only by another city female, this one a second grader (the only one in the group to palatalize ***unuk*** "grandson"). The non-words on the k-stem list follow the same general pattern of no-palatalization as the real words. Only *požak* "inhabitant of the 'Pož' river valley in China" and *gl'inak* "small mud adnimal, native to China" elicit the *-ci* pattern from two city respondents. It is, however, noteworthy that, in their semantic structure, these two non-words are comparable to the four real words, mentioned above, which elicit the highest number of *-ci* responses from Group 1 speakers.

On the whole, then, Group 1 subjects use the "velar palatalization" pattern very limitedly. Some speakers may still be in the process of acquiring this pattern, while others, more advanced along this path, have internalized a norm which retains a very restricted domain for "velar palatalization," even in the case of human nouns.

A marked increase in the use of the *-ci* pattern can be observed among Group 2 speakers. Their treatment of the items allows us to speak of three clusters, where the items in Clusters 1a and 2 elicit, with a high degree of consistency, the *-ci* and the *-ki* patterns respectively, and Cluster 1b items are produced with the *-ci* pattern by some speakers, and with the *-ki* pattern by others.

In Cluster 1a the items *pol'ak* , *rusnak* , *slovak* , which are singled out for the *-ci* pattern by some, but not all Group 1 speakers, are palatalized by all members of Group 2. The other items in Cluster 1a, which are all human nouns with the exception of *bujak* , "bull," marked [+animate, -human] , also elicit strong agreement with respect to palatalization.

Cluster 1b items, in semantic terms, are identical to Cluster 1a items. We note the inclusion into Cluster 1b of the real word *unuk* . Several non-words, semantically comparable to the real words, are also included into this cluster. But the number of speakers who use the *-ci* pattern with Cluster 1b items, in comparison to Cluster 1a items, is visibly reduced, particularly in the case of the non-words. The *-ki* pattern, on the other hand, wins evermore speakers. A preference for the *-ci* pattern is shown foremost by NS speakers, and much less by RK residents. For example, in the case of the four non-words *forok* "small boy in African tribe," *hunak* "inhabitant of the city 'Hun' in China," *kožak* "bird, native to Mexico," and *gl'inak* "small mud animal, native to China," the speakers who use the *-ci* response are all city residents. For the other four items in Cluster 1b the proportion of city to village speakers who use palatalization is 2:1, or even 3:1.

With regard to items in Cluster 2, Group 2 subjects demonstrate strong agreement in applying the *-ki* pattern. In fact, from the perspective of the pattern used, Cluster 2 and Cluster 1b items are treated by many speakers identically. Cluster 2, like the other clusters, includes human nouns, and nouns denoting animals. In contrast to the two other clusters, Cluster 2 contains also inanimate nouns. With the exception of a single occurrence of the *-ci* pattern, produced by a city female for the non-word *saturn'ik* "rocket circling Saturn," no Group 2 speaker palatalizes any of the Cluster 2 items, not even those which refer to human beings. Credit for the *-kove* pattern with the items *bracik* "brother"$_{\text{dimin.}}$ *dzijak* "cantor," and *ažik* "small boy, helper of Arab sheikh," referring to humans, goes to an

11th grade village youth, while a 5th grade city youth takes credit for using the *-kove* response with the non-human noun *rak* "crab." The other speakers of Group 2 use only the *-ki* pattern with all the Cluster 2 items.

Thus, compared with Group 1, Group 2 speakers have a considerably larger domain within which the*-ci* pattern is applied. All items in this domain, except *bujak* , refer to human beings. All other items on the list, among them also items marked [+human] , appear for most speakers in a domain where the *-ki* pattern is dominant. However, several speakers have, on the basis of semantic similarity, extracted some of the items from the second domain and transposed them to the domain of the *-ci* pattern. These speakers are mostly city, not village, residents. We note further that items denoting inanimate objects are palatalized by neither Group 2, nor Group 1 speakers. Only the item *saturn'ik* , a non-word, managed to entice a single city female in Group 2 to break this general pattern of no-palatalization.

The response pattern for Group 3 reveals a considerable reduction, in comparison with Groups 1 and 2, in the use of the *-ki* pattern, and a simultaneous increase in the use of the *-ci* pattern. Even items denoting inanimate objects elicit the *-ci* response from some speakers of this group.

The division of the items into three clusters for Group 3 speakers has the same general semantic underpinnings, made manifest through the use of either the *-ci* or the *-ki* patterns, as was seen for Group 2 subjects. The differences between the groups are subtle, but important.

Cluster 1a for Group 3, semantically similar to Cluster 1a for Group 2, and eliciting the same strong support with respect to "velar palatalization," has been enlarged by speakers of Group 3. The real word *xrobak* , denoting an animate non-human being, and the two non-words *požak* and *hunak* , which refer to members of ethnic groups, have been incorporated into Cluster 1a by Group 3 speakers, where Group 2 subjects included them into the middle cluster. Moreover, the human noun *dzijak* , while eliciting the *-ki* response from some Group 3 speakers, is nonetheless treated by the majority of group members like other Cluster 1a items. For Group 2 subjects *dzijak* was relegated to Cluster 2.

Cluster 1b, semantically identical to Cluster 1a, has been reduced in size by Group 3 members. This is a direct result of the expansion of Cluster 1a. Disregarding the item *bracik*, the remaining items in Cluster 1b for Group 3 are identical with Cluster 1b items of Group 2. The duality in the treatment of these items, i.e., the elicitation of both patterns, but from different speakers, which we noted for Group 2 subjects, is evident also among Group 3 members, with one difference - the majority of Group 3 speakers prefer the *-ci*, not the *-ki* pattern. In this respect, the items in Cluster 1b are treated like the items in Cluster 1a by these speakers.

Only the item *bracik* in Cluster 1b elicits no *-ci* response. We note instead that the majority of Group 3 speakers produce this item with the *-kove* pattern. They are the only speakers in the non-adult sample (with the exception of the mentioned RK youth in Group 2) to do this. Nine members of Group 3 respond with the *-kove* pattern. Of these, seven are RK residents, of which five are females. The item *forok* elicits, in addition to the *-ci* and the *-ki* responses, also the *-kove* response from two youths. Both of them are NS residents.

Cluster 2 for Group 3 also contains fewer items than the equivalent cluster for Group 2. No items marked [+human] remain in this cluster, with the single exception of the non-word *ažik*. Not unexpectedly, the *-ki* pattern is the preferred one for items in this cluster, although some speakers extend the *-ci* and even the *-kove* patterns into this domain. This is particularly true for subjects who live in the city. For example, all the *-ci* responses in Cluster 2, discounting those for the item *ažik*, are produced by city youths. In the case of *ažik*, marked [+human], among the four speakers, who respond with the *-ci* pattern, one is a village resident, the other three live in the city. The most extensive use of the *-ci* pattern within Group 3 is made by two NS boys - one in the 3rd grade, the other in the 4th.

Two city speakers are also credited with most of the *-kove* responses with Cluster 2 items - a 7th grade female, and a 6th grade male. They apply this pattern to items (also in other clusters) marked [+human] , e.g. *bracikove, robotn'ikove, forokove, ažikove, tundakove* ("brothers,"*dimin.* "workers," "small boys in African tribe," "small boys, helpers of Arab sheikh," "fruit vendors in Arab lands"), as well as to those denoting animals and inanimate objects, e.g. *kon'ikove, rakove, kurn'ikove, slovn'ikove, stol'ikove, kempikove* ("horses,"*dimin.* "crabs," "chicken coops," "dictionaries," "tables,"*dimin.* "small camping vehicles"). One village male uses the *-kove* pattern also, but only with a single Cluster 2 item - *kon'ik* , a diminutive like *bracik*, the only other item on the list which this village youth produces with the *-kove* response.

Compared with the other non-adult groups, we note that Group 3 speakers display the clearest division of the semantic space, revealed through the constraints on the use of the *-ci* and the *-ki* patterns. The former pattern is applied to items marked [+human] , and the latter pattern to those marked [+animate, -human] and [-animate] . The items *bujak* "bull" and *xrobak* "worm," and the semantically equivalent non-words *kožak* "bird, native to Mexico" and *gl'inak* "small mud animal, native to China," although denoting animals, are incorporated into the domain of the *-ci* pattern. At the same time, we note the tendency among several Group 3 speakers to extend the *-ci* pattern beyond its semantically restricted domain. These speakers are predominantly city residents. The same can be said of the *-kove* pattern, which some of the city youths use rather freely, particularly with Cluster 2 items. This leads to the conclusion that, whereas for the village youths the semantic determinants of the items exert a stronger influence on pattern choice, for many city youths their choice of pattern is independent of semantic considerations. It is noteworthy that for these city youths it is the *-ci* , not the *-ki* pattern which is dominant.

Discussion of the k-stem clusterings

The response patterns of the non-adult subjects to a large degree, undoubtedly, reflect different stages in the acquisition process of the "velar palatalization" pattern. The composition of the subject groups intimates that this may be the case for a fair number of the non-adults. The social make-up of the groups, however, also indicates that the subject groups are not merely age groupings. Thus, the performance of the non-adult subjects must mirror more than just acquisitional progress, and must reflect tendencies prevalent in the community in general, of which the youths are but the youngest members.

If we abstract from those aspects of the non-adult response patterns which are obvious manifestations of different stages in the acquisition process of "velar palatalization," e.g. the adoption of the *-ki* pattern for the nouns *rusnak* , *slovak* , and perhaps *pol'ak* by the youngest speakers in Group 1, we can say that the response patterns of the non-adult subjects do indeed contain many similarities to the response patterns of the adults, and reflect the existence of parallel tendencies in both groups.

Foremost we note that the non-adult data confirm the important role that meaning of the individual lexical items plays in the use of the "velar palatalization" pattern. This is evident not only in the case of the real words, but also in the case of the non-words, for which semantic similarity with a real word assures similarity in treatment. The semantic feature [+member of ethnic group] emerges as the most important feature which motivates the speakers to palatalize a given item. The feature [+human] , which incorporates the previous feature, emerges for many speakers as no less important in this process.

The presence of either of the two semantic features on a given lexical item is no absolute guarantee, however, that the "velar palatalization" pattern will be utilized. This is not only a consequence of the difference in norms internalized by different speakers (as discussed earlier in the chapter), but seems to result from a differentiated hierarchy of importance among the lexical items themselves.

Thus, the item *rusnak* assumes the lead role in the palatalization process for all speakers, no doubt as a result of its meaning and function as an ethnonym. The other three items on the list which refer to members of ethnic groups *(slovak, pol'ak, turok)* also have a high probability of being palatalized, although this cannot be predicted with absolute certainty for all speakers. The importance of individual differences cannot be ignored.

The semantic feature [+human] expands the boundaries for the *-ci* pattern, but even so, we see that not all speakers take full advantage of this opportunity. Instead individual lexical items within the granted domain are singled out. Variation in this respect between speakers occurs on an item-to-item basis. This again underscores the magnetic force that individual words possess in attracting the *-ci* pattern, irrespective of the number of words which have the same features and could, therefore, also attract this pattern.

One cannot, of course, state that the size of a given semantic class is without any importance in the process of strengthening the "velar palatalization" pattern. The speakers who use this pattern within its full semantic realm are also the ones who are most likely to use it beyond this realm, an indication that there is power in numbers. But that this power does not lie in numbers alone is convincingly demonstrated by the two "exceptions" in the domain of human nouns, namely, the words *bujak* "bull" and *xrobak* "worm." The likelihood that these two words will be produced with the *-ci* pattern is very high for any given speaker, despite the fact that only two items of a given class are involved.

However, the conclusion that the application of "velar palatalization" is, therefore, really independent of meaning cannot be upheld for the majority of speakers - both non-adults and adults. Such a conclusion is contradicted by our data on the non-words, whose treatment by the subjects reflects not only the importance of meaning (since the form was previously unknown to the speakers), but indeed reveals a hierarchy among the determinants of meaning. Thus, the items *požak* "inhabitant of the 'Pož' river valley in China" and *hunak* "inhabitant of the city 'Hun' in China," marked [+ethnic group], exhibit the highest probability of appearing with the *-ci* pattern. In second place are the items *tundak* "fruit vendor in Arab lands," marked [+human], and *gl'inak* "small mud animal, native to China," marked [+animate, -human] . The item *kožak* "bird, native to Mexico," with the same semantic features as *gl'inak* , places third. With regard to the "velar palatalization" pattern there exists, therefore, a hierarchy of the semantic features, as well as a hierarchy of the lexical items, and the first dominates the second.

The data on the non-adult informants reveal also that the variability among speakers with respect to their use of the "velar palatalization" pattern is perhaps not completely arbitrary, but may be associated, if only weakly, with the distribution of speakers within the social matrix. The one variable which emerges as important for the non-adult subjects is their place of residence - compared with the youths from the village, the city youths tend to use the "velar palatalization" more extensively, and in doing so may ignore the meaning of the items. We have noted some connection between this social variable and performance on the "velar palatalization" also in the case of the adult speakers, e.g. of Groups II and A, with the same results as for the non-adults.

Summary

We review briefly the main results of our analysis of the "velar palatalization" pattern. We observe two opposing tendencies within the speech community vis-à-vis this pattern: one enhancing its use, the other restricting it. Both of these tendencies emerge from (at least) two speech norms which are mutually interpretable and can, therefore, coexist within one community. One norm is considerably more complex than the other. This leads to more variability in the application of the "velar palatalization" pattern by those speakers who adhere to the more complex norm.

Semantic considerations and individual words play an important role in the use of the "velar palatalization" pattern. Indeed we can speak of a hierarchy of semantic features, and a hierarchy of individual words, where the first dominates the second. The influence of the semantic hierarchy is evident in those cases where the pattern is productive.

With regard to the productivity of the "velar palatalization" pattern, we observe a situation where this pattern is productive for some members of the speech community and unproductive for other members of the same community. Where the pattern is revealed as productive we find differences, as well. These are differences not only in degree of productivity, but substantive differences, reflecting differences in the organization of speaker lexica which, in turn, stem from different conceptualizations of the linguistic system, i.e., different norms.

Furthermore, our results suggest that the productivity of the "velar palatalization" pattern is not necessarily determined by high numbers within a given word class to which the alternation applies, but that particular, highly significant words can also play a role in this. Thus, not only type frequency (cf. Bybee 1985:132-134), but also token frequency may affect the productivity of a morphophonemic alternation.

Lastly, we can state that the variability among speakers in their use of the "velar palatalization" pattern may not be completely arbitrary, but may indeed be associated with the distribution of speakers within the social matrix. The place of residence and the age of the speaker emerge as probably the most important social variables in influencing speech performance. The gender of the speaker appears influential in some cases, as does the level of education attained. At the present time, however, the "velar palatalization" pattern is embedded in the social structure unevenly, although one perceives that certain points of this structure do exert some influence on this morphophonemic alternation.

CHAPTER SEVEN

THE "DENTAL PALATALIZATION" PATTERN IN THE SPOTLIGHT

We turn now to the results of our analysis of the "dental palatalization" pattern in the locative singular of dental-stem masculine nouns in Rusyn. Nouns ending in one of six dental consonants are involved (see Chapter Four for background information). The number of items tested for each of the dental-stems is not identical, reflecting the encountered real-world situation where differences in type frequency exist between the six dental-stem noun groups (see Chapter Five; for a full listing of the dental-stem nouns refer to Appendix C).

Within the general scope of questions dealing with morphophonemic variability, productivity, and change, our data on the dental-stems provide us the opportunity to focus on two specific proposals made in this area. Both of these proposals pertain to exceptions which are found within morphophonemic patterns. The first, made by Tiersma (1982), deals with cases which seem to contradict the predictions of the theory of markedness. Tiersma suggests a theory of "local markedness" to explain these cases (see Chapters Three and Five). Since, according to Tiersma, nouns denoting places adhere to the conventions of local markedness when they occur in the locative case, i.e., these nouns become locally unmarked in the locative case and, thus, more tolerant of irregularity, each of the dental-stem noun groups on our questionnaire includes several toponyms, both as real words and as non-words.

The second proposal, offered by Comrie (1979; discussed in Chapter Three), concerns exceptions which may occur within morphophonemic alternation sets, such that one alternation within the set disappears. Comrie suggests that phonetic considerations play an important role in this process. If individual alternations differ with respect to the phonetic distance between the alternating segments, then, according to Comrie, the alternation where the phonetic distance is the greatest will be the most likely one to disappear. A corollary to

Comrie's hypothesis would predict that if, in a given morphophonemic alternation set, there are pairs of alternations whose alternating segments do not differ with respect to phonetic distance, then such alternation pairs should be treated in like manner by language users. In our data there are two such alternation pairs: (d~dz) and (t~c), on the one hand, and (z~ź) and (s~ś), on the other.

If exceptions exist, then they must be exceptions to some generalization. Comrie's hypothesis rests on the view that any given morphophonemic alternation set is a pattern whose distribution is subject to a generalization and, therefore, the pattern is describable by a single rule. The "dental palatalization" pattern is a morphophonemic alternation set which brings under one roof, so to speak, six dental-stem noun groups. Our data on this pattern provide us the opportunity to examine whether its use can indeed be seen as a consequence of a generalization which has been internalized by the speakers.

As in the case of the k-stem nouns, our list of dental-stem nouns contains both real and non-words. However, in contrast to the procedure used for the k-stem nouns, both dental-stem real words and dental-stem non-words were submitted to the "response coincidence analysis" jointly. We felt justified in doing this, since each noun group among the dental-stems is much smaller than was the case for the k-stem nouns, and, moreover, the semantic context, which was so dominant for the k-stem nouns, has been virtually removed in the case of the dental-stem nouns.

In presenting the results of the RCA, we discuss each dental-stem noun group separately. In each case the data on the adult subjects is followed by data collected from our non-adult informants. To facilitate our discussion and achieve a better overview of the data, we have rearranged the order of the subject groups which was established by the RCA. We have done the same in the case of the object clusterings. For this reason, as well as because of the large number of tables relevant to the dental-stem data, we have omitted the RCA dendrograms for the subject groups and the object clusterings. The procedure for establishing the groupings, however, was the same as the one followed for the k-stem nouns (see Chapter Six). All the tables for the subject groups have been amalgamated into two appendices: tables for the adult subject groups are in Appendix E, while tables for the non-adult subject groups are contained in Appendix F. The treatment of the lexical items by the individual subject groups is displayed in tables which appear throughout this chapter. A unified notation has been adopted in these latter tables to represent the speakers' treatment of the dental-stem nouns: "C" - stem-final dental consonant; "C' " - palatalized stem-final dental consonant; "e" - the desinence *-e* ; "u" - the desinence *-u* ; "ovi" - the desinence *-ovi* .

The d-stem words

The adult speakers

The long questionnaire included 16 d-stem items: 12 real words and 4 non-words. Among the real words there were 5 toponyms, while among the non-words there were 2 items referring to places.

Subject groups

Three subject groups were established for the adult speakers: Group I with 24 members, Group II with 31, and Group III with 9. The profiles of the three groups are displayed in Tables E.1 - E.6.

Subject Group I includes more speakers over forty, and among these older speakers the majority are RK residents. In fact, all the oldest village speakers appear in this group. Half of Group I members have elementary education. All the males in our sample with elementary education join this group, and all four are RK residents. All six RK females of Group I also have elementary education.

Group II compensates for the age imbalance noted among the village speakers of Group I: the RK members of Group II are mostly younger, i.e., under forty, while the older villagers are under-represented in this group. The distribution of NS members in

Group II, on the other hand, generally parallels the distribution of city speakers in the adult sample. The number of Group II members with higher education is, however, somewhat higher than in the adult population.

The education variable is important in defining the membership of Group III. Most speakers of this group have higher education. Of these, most are NS males under the age of forty.

Object clusterings

A comparison of the treatment by the three subject groups of the d-stem nouns reveals a significant increase in the use of the "dental palatalization" pattern from Group I through Group III (see Tables 7.1, 7.2, 7.3). The increased use of the alternation proceeds in an orderly fashion permeating through the lexicon of Group I through Group III speakers as if through a pyramid. New items are affected by the alternation with every group, while palatalization is retained also in items palatalized by the previous group. At the same time, the number of speakers who use the alternation increases from Group I through Group III.

The most consistent in their response pattern are speakers of Group I, followed by speakers of Group III, while speakers of Group II, in general, vacillate most between palatalization and no-palatalization for the individual items. For speakers of Group I d-stem nouns are not affected by "dental palatalization," with the exception of the item *hvozd* "nail." Some speakers of this group also palatalize the item *l'ad* "ice."

The same two items are palatalized by the majority of Group II speakers, and the alternation is carried to new items, most notably the toponym *novi sad* . This new item in the first cluster is produced by almost half of the speakers of this group in both palatalized and unpalatalized form. Two other toponyms, *beograd* and *šid* , are also produced in palatalized form by some speakers, but the other toponyms, as well as the non-words are unaffected by palatalization for Group II subjects. Although the no-palatalization pattern remains dominant for most speakers of Group II, the agreement with respect to

Table 7.1: OBJECT CLUSTERS (d-STEM NOUNS) FOR ADULT **SUBJECT GROUP I**

(n = 24)

		RESPONSES				
Cluster	Item*	C'e	Cu	C'e/Cu	Covi	Other
1	hvozd	70.8%	20.8%	8.3%	0	0
	l'ad	29.2%	70.8%	0	0	0
	had	16.6%	62.5%	0	12.5%	8.3% du/dovi; dze/du/dovi
2	šl'id	8.3%	91.6%	0	0	0
	narod	8.3%	91.6%	0	0	0
	rod	8.3%	87.5%	4.2%	0	0
	zavod	4.2%	95.8%	0	0	0
	bid	4.2%	95.8%	0	0	0
	novi sad	4.2%	91.6%	4.2%	0	0
	beograd	0	100%	0	0	0
	šid	0	100%	0	0	0
	madrid	0	100%	0	0	0
	bagdad	0	100%	0	0	0
	karid	0	100%	0	0	0
	šod	0	95.8%	4.2%	0	0
	čirinod	0	95.8%	0	0	4.2% NC**

* Non-words are printed in **bold** type.
** NC = item produced with no change.

palatalization of the items in Cluster 1a is noticeably stronger than for Group I speakers, and there are numerous speakers in Group II who use the alternation also with items in Cluster 1b.

The scope of palatalization is widest for Group III speakers, affecting all the d-stem nouns on the list, including all the toponyms, as well as all of the non-words. The

Table 7.2: OBJECT CLUSTERS (d-STEM NOUNS) FOR ADULT **SUBJECT GROUP II**

(n = 31)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	hvozd	67.74%	22.58%	9.67%	0	0
	l'ad	64.51%	29.03%	6.45%	0	0
	novi sad	45.16%	6.45%	48.38%	0	0
1b	rod	32.25%	51.61%	12.9%	0	3.22% NR
	beograd	32.25%	54.83%	12.9&	0	0
	Šid	29.03%	58.06%	12.9%	0	0
	narod	29.03%	61.29%	6.45%	0	3.22% du/dovi
	zavod	16.12%	77.41%	6.45%	0	0
	Šl'id	12.9%	77.41%	9.67%	0	0
	had	9.67%	67.74%	3.22%	9.67%	9.67% du/dovi dovi
2	bagdad	6.45%	87%	6.45%	0	0
	madrid	3.22%	90.32%	6.45%	0	0
	Šod	3.22%	93.54%	0	3.22%	0
	bid	0	93.54%	6.45%	0	0
	karid	0	100%	0	0	0
	Čirinod	0	100%	0	0	0

strongest agreement with respect to palatalization is evident for Cluster 1 items, which has grown in pyramid fashion in comparison with the other two groups. Several items in Cluster 2, including the toponyms *Šid* (town in Srem) and *karid* "ancient Mediterranean city," are also palatalized by the majority of Group III speakers, whereas the remaining items in this cluster, among them also toponyms and non-words, are palatalized by fewer speakers.

On a comparison of the three groups, only Group III subjects (with one exception in

Table 7.3: OBJECT CLUSTERS (d-STEM NOUNS) FOR ADULT **SUBJECT GROUP III**

(n = 9)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	rod	100%	0	0	0	0
	hvozd	88.8%	0	11.1%	0	0
	novi sad	88.8%	0	11.1%	0	0
	l'ad	88.8%	11.1%	0	0	0
	narod	77.7%	11.1%	11.1%	0	0
	beograd	77.7%	11.1%	11.1%	0	0
	had	55.5%	22.2%	0	22.2%	0
2	zavod	66.6%	33.3%	0	0	0
	karid	66.6%	33.3%	0	0	0
	šid	55.5%	33.3%	11.1%	0	0
	čirinod	55.5%	33.3%	11.1%	0	0
	šl'id	44.4%	55.5%	0	0	0
	bagdad	33.3%	44.4%	22.2%	0	0
	šod	33.3%	44.4%	22.2%	0	0
	bid	22.2%	33.3%	44.4%	0	0
	madrid	22.2%	44.4%	33.3%	0	0

Group II) apply palatalization to non-words. With regard to toponyms, the palatalization pattern appears, for Groups II and III, foremost in the two items *novi sad* and *beograd*, followed closely by *šid*. For the latter group one of the toponyms among the non-words - *karid* - is also palatalized by the majority of speakers, while the remaining toponyms - *bagdad, madrid, bid* "city in early England" - elicit much fewer palatalized responses. The highest number of palatalized responses for all three groups, however, appear with the words *hvozd* "nail" and *l'ad* "ice," which are not marked as toponyms.

The non-adult informants

The non-adult subjects were presented with 8 d-stem items: 6 real words and 2 non-words. The d-stem items included 4 toponyms: 3 among the real words, and 1 toponym among the non-words.

Subject groups

Three subject groups of approximately equal size are evident among the non-adult informants. Group 1 and Group 3 include 13 members each, while Group 2 numbers 11 speakers. Group profiles are presented in Tables F.1-F.3 in Appendix F.

Group 1 consists of more males than females, and among the males, most reside in the village. The girls in the group are drawn from all three grade levels, whereas the boys are drawn only from the two younger grade levels, i.e., grades 1 - 8.

Group 2 is dominated by females, and of these the majority reside in the city. With regard to age, the youngest informants, i.e., in grades 1 - 4, outnumber speakers from the other two age groups.

Group 3, on the other hand, is composed of somewhat older subjects. Whereas most of the females in this group are drawn from grades 5 - 8, the males come from the high school level, i.e., grades 9 - 12. This group includes slightly more males than females.

Thus, whereas for Group 3 the age variable is most important, for Groups 1 and 2 membership is defined by several variables. Group 1 includes slightly more males (the majority RK residents) in grades 1 - 8, while Group 2 is dominated by females (most of them NS residents) in grades 1 - 4.

Object clusterings

We note an increase in the use of the palatalization pattern from Group 1 through Group 3 such that with every group more items are palatalized by a larger number of speakers (refer to Tables 7.4, 7.5, 7.6). For Group 1 subjects palatalization is confined to

Table 7.4: OBJECT CLUSTERS (d-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**

(n = 13)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	novi sad	46.15%	53.84%	0	0	0
	l'ad	23%	76.92%	0	0	0
2	hvozd	0	100%	0	0	0
	šl'id	0	100%	0	0	0
	beograd	0	100%	0	0	0
	madrid	0	100%	0	0	0
	šod	0	100%	0	0	0
	bid	0	100%	0	0	7.69% NC

Table 7.5: OBJECT CLUSTERS (d-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**

(n = 11)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	beograd	90.1%	9.1%	0	0	0
	novi sad	72.7%	9.1	18.2%	0	0
	hvozd	45.45%	45.45%	9.1%	0	0
2	šl'id	9.1%	90.1%	0	0	0
	madrid	0	100%	0	0	0
	l'ad	0	100%	0	0	0
	šod	0	100%	0	0	0
	bid	0	100%	0	0	0

Table 7.6: OBJECT CLUSTERS (d-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 3**

(n = 13)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	novi sad	100%	0	0	0	0
	l'ad	100%	0	0	0	0
	hvozd	76.92%	15.38%	7.69%	0	0
	beograd	69.23%	23%	7.69%	0	0
	šl'id	53.84%	38.46%	0	0	7.69% de
2	**šod**	38.46%	46.15%	7.69%	0	7.69% de/dze
	bid	23%	76.92%	0	0	0
	madrid	15.38%	84.6%	0	0	0

two items: the toponym *novi sad* and the real word *l'ad* "ice." Almost half of the group members palatalize the toponym, but considerably fewer do so in the case of the latter item. The dominant group pattern is that of no-palatalization.

Group 2 speakers show stronger agreement with regard to palatalizing the toponym *novi sad* than Group 1 subjects, although for speakers of the second group the item *l'ad* is not affected by palatalization. Instead, the item *hvozd* "nail" is palatalized by half of Group 2 members. The item which receives the highest number of palatalized responses from Group 2 speakers, however, is the toponym *beograd* . Other d-stem items are produced with no palatalization by the subjects of Group 2.

For Group 3 the palatalization pattern is extended, by at least some speakers, to all d-stem items, including all of the toponyms and the non-words. All Group 3 speakers, on the other hand, palatalize *novi sad* and *l'ad* , and the majority do so also in the case of *hvozd* , and the toponym *beograd* . We note that these are the same items palatalized by speakers of adult Groups II and III. But on an overall comparison, the response pattern of non-adult Group 3 most closely resembles the response pattern of adult Group III, not least because for both groups the palatalization pattern extends widely through the lexicon and affects even non-words.

The t-stem words

The adult speakers

The long questionnaire contained 17 t-stem items: 13 real words and 4 non-words. There were 6 toponyms among the t-stems: 4 among the real words and 2 among the non-words.

Subject groups

A cluster analysis divided the adult speakers into three groups of approximately equal size. 24 speakers were drawn into Group I, 21 into Group II, and 19 into Group III. Tables E.7-E.11 provide an overview of the composition of the three subject groups.

Groups I and II are fairly representative of the adult sample in general. In Group I, however, a slight imbalance is noted among the NS speakers: there are somewhat fewer younger speakers than older ones.

Group III, on the other hand, includes the highest number of younger speakers. These come predominantly from the city, and most of them are under forty. The variable of education is also important in defining group membership: the majority of Group III speakers have higher education. This is particularly true of the city males.

Object clusterings

Speakers of all three subject groups use the palatalization pattern with at least some of the t-stem items. But whereas speakers of Groups I and II, in general, limit the alternation to a definite set of real words, Group III subjects extend the alternation beyond this set, and some produce palatalized responses even with the non-words (Tables 7.7, 7.8, 7.9).

Table 7.7: OBJECT CLUSTERS (t-STEM NOUNS) FOR ADULT **SUBJECT GROUP I**

(n = 24)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	švet	100%	0	0	0	0
	xvost	83.33%	8.33%	8.33%	0	0
	xribet	83.33%	12.5%	4.16%	0	0
	život	79.16%	16.66%	4.16%	0	0
	most	75%	16.66%	8.33%	0	0
1b	kohut	4.16%	62.5%	8.33%	20.83%	4.16% tu/tovi
2	plot	4.16%	95.83%	0	0	0
	sarit	4.16%	95.83%	0	0	0
	univerzitet	0	100%	0	0	0
	front	0	100%	0	0	0
	frankfurt	0	100%	0	0	0
	jehipet	0	100%	0	0	0
	ararat	0	100%	0	0	0
	everest	0	100%	0	0	0
	vikot	0	100%	0	0	0
	rumest	0	100%	0	0	0
	korit	0	100%	0	0	0

The response patterns of speakers of Groups I and II overlap, with the difference, that for Group II subjects the alternation affects one additional item on the list, and, at the same time, the number of speakers of Group II who use the alternation with the given set of items is larger. Thus, Group I speakers limit the alternation to the five items - *švet* "world," *xvost* "tail," *xribet* "backbone," *život* "life," *most* "bridge," where the first item is palatalized by all group members, but consensus with respect to palatalizing the other four items is not as strong. Group II speakers produce palatalized responses for six

Table 7.8: OBJECT CLUSTERS (t-STEM NOUNS) FOR ADULT **SUBJECT GROUP II**

(n = 21)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	švet	100%	0	0	0	0
	xvost	100%	0	0	0	0
	život	100%	0	0	0	0
	plot	95.23%	0	4.76%	0	0
	xribet	95.23%	4.76%	0	0	0
	most	90.47%	0	9.52%	0	0
1b	kohut	9.52%	47.61%	4.76%	33.33%	4.76% tu/tovi
2	**vikot**	4.76%	95.23%	0	0	0
	univerzitet	0	100%	0	0	0
	front	0	100%	0	0	0
	frankfurt	0	100%	0	0	0
	jehipet	0	100%	0	0	0
	ararat	0	100%	0	0	0
	everest	0	100%	0	0	0
	rumest	0	100%	0	0	0
	korit	0	100%	0	0	0
	sarit	0	100%	0	0	0

items - the same five palatalized by Group I speakers, as well as the item *plot* "fence," and they do so almost unanimously.

However, neither Group I nor Group II speakers extend palatalization beyond the limits of their respective word sets (with minor exceptions). The toponyms on our list, as well as the non-words are unaffected by the alternation. Thus, for the majority of the speech community the use of palatalization with the t-stems is limited to a few items. Where the differences between the two groups exist, they are manifested by an increase in the domain of palatalization by a single item. It is noteworthy that the exclusion or the inclusion of

Table 7.9: OBJECT CLUSTERS (t-STEM NOUNS) FOR ADULT **SUBJECT GROUP III**

(n = 19)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	most	100%	0	0	0	0
	Švet	100%	0	0	0	0
	xribet	100%	0	0	0	0
	xvost	94.73%	0	5.26%	0	0
	Život	94.73%	5.26%	0	0	0
1b	plot	57.89%	31.57%	10.52%	0	0
	front	42.1%	42.1%	15.78%	0	0
	kohut	31.57%	42.1%	0	21%	5.26% tu/tovi
2	ararat	21%	73.68%	0	0	5.25% NR
	rumest	15.78%	57.89%	21%	0	5.26% NC
	jehipet	15.78%	73.68%	10.52%	0	0
	korit	15.78%	73.68%	10.52%	0	0
	sarit	10.52%	73.68%	10.52%	0	5.26% ce
	frankfurt	10.52%	89.47%	0	0	0
	everest	10.52%	89.47%	0	0	0
	vikot	5.26%	63.15%	26.31%	0	5.26% NC
	univerzitet	0	100%	0	0	0

this single item into the domain of palatalization is not subject to vacillation and, hence, the double response *-ce* / *-tu* is not used. With an increase in the number of items affected by palatalization we also note a more consistent use of the alternation, but only with the items in the defined set.

The number of items affected by palatalization in the case of Group III speakers, on the other hand, is significantly greater than for the rest of the speech community. At the same time we also note an increase in the use of both the palatalized and the unpalatalized variants for single items. There is almost no vacillation, however, among Group III members with regard to palatalizing the five items in Cluster 1a, i.e., the same five items palatalized by the entire community. With regard to the item *plot* , Group III speakers occupy a somewhat intermediate position between Groups I and II, although the majority lean towards palatalization. One further item, namely, *front* "front" (military), is added by approximately half of Group III speakers to the domain of palatalization. With this enlarged domain of items consistently affected by palatalization, Group III speakers extend the alternation to new items, albeit more sporadically and on an individual basis. Consequently, with the exception of the item *univerzitet* "university," all other items on the list, including all the toponyms and the non-words, elicit palatalized responses from at least some speakers of Group III.

The non-adult informants

The short questionnaire contained 9 t-stem items: 7 real words and 2 non-words. Among the t-stem items there were 3 toponyms: 2 among the real words and 1 among the non-words.

Subject groups

Three subject groups are evident in the non-adult population. Group I is the smallest with 7 members, while Group 2 and Group 3 have 15 members each (see Tables F.4 - F.6 for group profiles).

Group 1 is clearly the youngest group. In fact, all the village speakers of this group are in grade 1. The city speakers are slightly older, with two speakers at grade level 1 -4, and two at the 5 - 8 level.

Group 2 is a somewhat older group. Speakers of this group are also distributed between grades 1 - 8, but more are drawn from grades 5 - 8, rather than grades 1 - 4. Females predominate in this group, and most of them live in the city.

Almost all of the oldest speakers in the non-adult sample join Group 3. Most of the females are village residents, while the majority of males live in the city.

Thus, whereas the age variable is important in defining the three non-adult groups, it is not the only variable at least for speakers of Groups 2 and 3. Gender and residence also play a role: Group 2 is composed of females, predominantly from the city, while in Group 3 the females are mostly village residents. The majority of males of Group 3, on the other hand, live in the city.

Object clusterings

All three non-adult subject groups produce palatalized responses for at least some items on the list. The number of items affected by the alternation and the consensus among group members as to the use of the palatalization pattern increases from Group I, the youngest group, through Group 3, with the oldest speakers. The use of the alternation progresses from group to group in pyramid fashion, affecting the same items which are palatalized by the adult speakers (Tables 7.10, 7.11, 7.12).

In the case of Group I subjects only two of these items - *švet* and *život* - are produced with the alternation, and by only half of the group members. The number of items increases to three for most of Group 2 subjects, and some speakers even palatalize all five items - *švet, život, most, xribet, xvost* . There is virtually full agreement with respect to palatalizing these five items among Group 3 subjects, and almost half of the members of this group extend palatalization to the non-word *vikot* "flower vase." At least for these speakers, most of them males (five out of seven), the palatalization pattern for the t-stem items shows some parallels with the pattern of adult Group III subjects, for whom an enlarged domain of items, which are consistently palatalized, enables a productive use of the palatalization pattern beyond a restricted lexical set.

Table 7.10: OBJECT CLUSTERS (t-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**

(n = 7)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	Švet	42.85%	42.85%	14.28%	0	0
	Život	42.85%	57.14%	0	0	0
2	most	0	100%	0	0	0
	xvost	0	100%	0	0	0
	jehipet	0	100%	0	0	0
	xribet	0	100%	0	0	0
	ararat	0	100%	0	0	0
	vikot	0	100%	0	0	0
	rumest	0	100%	0	0	0

Table 7.11: OBJECT CLUSTERS (t-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**

(n = 15)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	most	86.6%	6.6%	6.6%	0	0
	Švet	86.6%	13.3%	0	0	0
	Život	80%	20%	0	0	0
2	xribet	26.6%	53.3%	13.3%	0	6.6% cu
	xvost	20%	73.3%	6.6%	0	0
	ararat	6.6%	86.6%	0	0	6.6% NC
	jehipet	0	86.6%	0	0	13.3% NR
	vikot	0	86.6%	6.6%	0	6.6% NC
	rumest	0	93.3%	0	0	6.6% NR

Table 7.12: OBJECT CLUSTERS (t-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 3**

(n = 15)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	švet	100%	0	0	0	0
	xribet	100%	0	0	0	0
	život	100%	0	0	0	0
	most	93.3%	6.6%	0	0	0
	xvost	86.6%	13.3%	0	0	0
2	**vikot**	46.6%	53.3%	0	0	0
	ararat	13.3%	86.6%	0	0	0
	jehipet	0	93.3%	0	0	6.6% NC/tu
	rumest	0	100%	0	0	0

The z-stem words

The adult speakers

The adult speakers were presented with 7 z-stem items. Of these, 4 were real words, and 3 were non-words. There were 3 toponyms among the z-stems: 2 among the real words, and one among the non-words.

Subject groups

The individual response patterns of the majority of subjects are identical, while the response patterns of a minority of speakers show considerable variability. We refer to the group representing the majority as Group I, and to the group which diverges from this majority as Group II.

Group II has 12 members (see Table E.12; a table of Group I is not included since this group is, in fact, our entire adult sample minus the 12 members of Group II). Most Group II speakers are under forty. The majority are city residents and have attained higher education.

Object clusterings

For the majority of adult speakers (Group I) the "dental palatalization" pattern is not extended to any z-stem item (Table 7.13). Hence, all the z-stems on our list evoke only the "Cu" response, although two village women with elementary education produce three items with no vowel desinence after the unaltered stem-final consonant. No-palatalization is, however, the only pattern applied by Group I speakers to the z-stem items on our list.

Group II subjects, on the other hand, use both the no-palatalization pattern, as well as the palatalization pattern with the z-stem items. Moreover, we note the use of a third response form, namely, *-ze* (under "Ce" in Table 7.14), which can be interpreted as a hybrid, or intermediate form between the palatalized and the unpalatalized responses, i.e.,

Table 7.13: OBJECT CLUSTERS (z-STEM NOUNS) FOR ADULT **SUBJECT GROUP I**

(n = 52)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
	kavkaz	0	100%	0	0	0
	pariz	0	100%	0	0	0
	mraz	0	100%	0	0	0
	sal'iz	0	100%	0	0	0
	džez	0	96%	0	0	4% NC
	l'ikoz	0	96%	0	0	4% NC
	birez	0	96%	0	0	4% NC

Table 7.14: OBJECT CLUSTERS (z-STEM NOUNS) FOR ADULT **SUBJECT GROUP II**

(n = 12)

		RESPONSES				
Cluster	Item	C'e	Ce	Cu	C'e/Cu	Other
	džez	8.3%	0	91.6%	0	0
	mraz	16.6%	0	83.3%	0	0
	pariz	16.6%	0	75%	8.3%	0
	birez	25%	0	66.6%	8.3%	0
	sal'iz	25%	25%	50%	0	0
	l'ikoz	25%	25%	50%	0	0
	kavkaz	0	8.3%	83.3%	0	8.3% ze/zu

the desinence *-e* , which normally triggers palatalization, preceded, however, by an unaltered stem-final consonant.

The speakers of Group II can be subdivided into two further groups on the basis of their choice of response - the palatalized form or the intermediate one - since those speakers who use palatalization with the z-stem items do not resort to the intermediate form, and vice versa (with a single exception of an NS female with elementary education). Although the no-palatalization pattern remains dominant for most of the speakers of Group II, we note that for several speakers of this group the palatalization pattern has assumed the dominant role. These speakers extend the alternation to all the z-stem items, except the toponym *kavkaz* "Caucasus." On the other hand, those speakers who produce the intermediate form do so generally in the case of the non-words, and produce the real words with the no-palatalization pattern (the toponym *kavkaz* is an exception here, as well).

Thus, with respect to the z-stem items, the majority of adult speakers make no use of the palatalization pattern. Some speakers, however, produce an intermediate form. This form is not used extensively, but significantly enough, it is used with non-words. Another group of adult speakers does use the palatalization pattern with the z-stem items. These speakers do not use the intermediate form. And for most of these latter speakers the palatalization pattern has a wider range, affecting both real words and non-words.

The non-adult informants

The non-adult informants were presented 4 z-stem items: 2 real words and 2 non-words. The real words included one toponym, as did the non-words.

Subject groups

Two subject groups can be established among the non-adult informants based on the same reasoning that was used for the adult subjects: the individual response patterns of the majority of the non-adults are identical, while variability is apparent in the patterns of a minority group. We refer to this minority group as Group 2, while the rest of the non-adults comprise Group 1.

Although a minority group with only 10 members, Group 2, significantly enough, is dominated by the oldest speakers among the non-adults (see Table F.7 for a group profile). It does, however, include also some younger speakers.

Object clusterings

The treament of the z-stem items by the non-adult speakers parallels the treament of these items by the adult subjects: Group 1, the majority of the speakers, makes no use of palatalization when dealing with z-stem items, while Group 2 speakers show some use of palatalization, and also produce the same intermediate form encountered among the adult subjects of Group II (Tables 7.15 and 7.16).

As in the case of adult Group II, the members of non-adult Group 2 can also be subdivided into two further groups on the basis of using either the palatalized response with some items or the intermediate response. Although the division is not as clear-cut among the non-adults, as it is among the adults, it is, nonetheless, quite apparent: all the palatalized responses for the z-stem items are produced only by males; the intermediate responses, on the other hand, are produced mostly by females (five out of seven). We note also that in the case of Group 2 non-adults all the z-stem items are potential targets of either palatalization or of the intermediate pattern, inasmuch as all items are produced with one of these two patterns by at least some member of the group. But the non-words are clearly preferred over the real words in this process.

Table 7.15: OBJECT CLUSTERS (z-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**
(n = 27)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
	pariz	0	100%	0	0	0
	mraz	0	100%	0	0	0
	birez	0	100%	0	0	0
	sal'iz	0	96.3%	0	0	3.7% NC

Table 7.16: OBJECT CLUSTERS (z-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**
(n = 10)

		RESPONSES				
Cluster	Item	C'e	Ce	Cu	C'e/Cu	Other
	pariz	10%	0	90%	0	0
	mraz	10%	20%	70%	0	0
	sal'iz	0	30%	70%	0	0
	birez	30%	20%	30%	0	20% že/ze: zu/ze

The s-stem words

The adult speakers

The long questionnaire included 15 s-stem items: 11 real words and 4 non-words. There were 7 toponyms among the s-stem items: 5 among the real words and 2 among the non-words.

Subject groups

Three subject groups can be distinguished among the adult speakers (refer to Tables E.13 - E.15 for the distribution of subjects into the three groups). Group I and Group III have 10 members each, while Group II is the largest with 44 members.

Group I includes more males and more speakers who are under the age of fifty. The three females in this group all have elementary education. The membership of Group II reflects the composition of the adult sample in general. For Group III, on the other hand, the variables of residence, age, and education are important: most Group III members are city residents, most are in the youngest age group, and most have higher education.

Object clusterings

There is little within-group variation in Groups I and II. More variability can be seen, however, in the response patterns of Group III speakers. Group I and II members show a similarity in their treatment of the s-stem items: palatalization is confined to a very restricted domain and no-palatalization prevails for all other items. Group III speakers, on the other hand, have a wider distribution of the palatalization pattern, although the core items palatalized by the entire community evoke the highest number of palatalized responses (see Tables 7.17-7.19).

Group I subjects palatalize only one s-stem item on the list, namely, *l'es* "forest." But only half of the speakers do this, while the rest produce either the no-palatalization

Table 7.17: OBJECT CLUSTERS (s-STEM NOUNS) FOR ADULT **SUBJECT GROUP I**
(n = 10)

Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
		RESPONSES				
1	l'es	50%	30%	20%	0	0
2	verbas	10%	90%	0	0	0
	kaktus	0	100%	0	0	0
	avtobus	0	100%	0	0	0
	nos	0	100%	0	0	0
	mars	0	100%	0	0	0
	cirkus	0	100%	0	0	0
	laos	0	100%	0	0	0
	atos	0	100%	0	0	0
	teksas	0	100%	0	0	0
	atlas	0	100%	0	0	0
	dos	0	100%	0	0	0
	til'is	0	100%	0	0	0
	arus	0	100%	0	0	0
	koris	0	100%	0	0	0

pattern, like for the other items, or both the palatalized and the unpalatalized variants for the one single word.

Group II speakers (i.e., the majority of speakers in our adult sample), on the other hand, show complete agreement with respect to the palatalization of the item *l'es* . The toponym *verbas* (town near Ruski Kerestur) also elicits palatalized responses from most speakers. The other s-stem items, however, are not palatalized by speakers of Group II.

The two items *l'es* and *verbas* elicit the highest number of palatalized responses from Group III speakers. These speakers extend palatalization also to most other s-stem items, including the non-words, although this is done sporadically and on an individual basis.

Table 7.18: OBJECT CLUSTERS (s-STEM NOUNS) FOR ADULT **SUBJECT GROUP II**

(n = 44)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	l'es	100%	0	0	0	0
	verbas	77.27%	0	22.72%	0	0
2	kaktus	0	97.72%	2.27%	0	0
	cirkus	0	97.72%	2.27%	0	0
	avtobus	0	97.72%	2.27%	0	0
	nos	0	100%	0	0	0
	mars	0	100%	0	0	0
	atos	0	100%	0	0	0
	teksas	0	100%	0	0	0
	atlas	0	100%	0	0	0
	laos	0	100%	0	0	0
	arus	0	100%	0	0	0
	dos	0	97.72%	0	0	2.27% NC
	til'is	0	97.72%	0	0	2.27% NC
	koris	0	97.72%	0	0	2.27% NC

We note the use by several Group III speakers of the intermediate pattern *-se* , formed in the same way as the intermediate pattern observed for the z-stems. Another intermediate form also appears, namely, *-šu* , but it is produced by a single speaker in conjunction with the palatalized response.

Group III speakers cannot be subdivided on the basis of whether they use the palatalization or the intermediate pattern with the s-stem items (as was possible for subject Group III formed for the z-stems) and several speakers do, in fact, produce both patterns. We conclude only that for Group III speakers the palatalization pattern is identified consistently with the two items *l'es* and *verbas* , and shows signs of being extended Table

7.19: OBJECT CLUSTERS (s-STEM NOUNS) FOR ADULT **SUBJECT GROUP III**

(n = 10)

		RESPONSES				
Cluster	Item	C'e	Ce	Cu	C'e/Cu	Other
1a	l'es	100%	0	0	0	0
	verbas	90%	0	0	10%	0
1b	teksas	30%	0	70%	0	0
	atlas	30%	0	70%	0	0
	arus	30%	0	70%	0	0
	avtobus	10%	0	80%	10%	0
	dos	10%	0	80%	10%	0
	mars	10%	0	90%	0	0
	atos	0	10%	90%	0	0
	laos	0	20%	60%	10%	0
	til'is	10%	10%	60%	10%	10% siju
	koris	10%	10%	30%	10%	40% še/šu; se/su; še/se; sce
2	kaktus	0	0	100%	0	0
	nos	0	0	100%	0	0
	circus	0	0	100%	0	0

(almost in exploratory fashion) to other s-stem items, among them even unfamiliar items (non-words on our list). In this process some speakers of this Group produce a pattern which may be viewed as intermediate between the palatalization and the no-palatalization patterns.

The non-adult informants

The short questionnaire contained 7 s-stem items: 5 real words and 2 non-words. There were 3 toponyms among the s-stems: 2 were real words and 1 was a non-word.

Subject groups

Three subject groups emerge among the non-adult informants. Group 1 includes 10 speakers, Group 2 has 8, and Group 3 consists of 19 youths (refer to Tables F.8-F.10).

Group 1 includes more speakers from the city than from the village. In fact, all the females in this group are city residents.

The majority of Group 2 members are males. Most of the subjects are in grades 1 - 4. The only two females in this group are also in the lowest grade level.

In Group 3, on the other hand, females and village youths are in the majority. Most of the older non-adult informants in our sample join this group, particularly those at the high school level, i.e., grades 9 - 12.

Object clusterings

We observe a progression in the use of the palatalization pattern among the three non-adult subject groups - from the complete absence of this pattern, in the case of Group 1, to its rather extensive application by Group 3 speakers (Tables 7.20 - 7.22).

Whereas Group 1 speakers do not palatalize any of the s-stem items on the list, Group 2 speakers palatalize only one item - *l'es* . This, of course, is the same item palatalized most consistently by the adult speakers. The item *l'es* is palatalized by most subjects of Group 2. The hybrid form *-se* is produced by the other group members (one speaker produces this form in conjunction with *-su*).

Table 7.20: OBJECT CLUSTERS (s-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**

(n = 10)

		RESPONSES				
Cluster	Item	C'e	Ce	Cu	C'e/Cu	Other
	avtobus	0	0	100%	0	0
	l'es	0	0	100%	0	0
	nos	0	0	100%	0	0
	verbas	0	0	100%	0	0
	teksas	0	0	100%	0	0
	dos	0	0	100%	0	0
	arus	0	0	100%	0	0

Table 7.21: OBJECT CLUSTERS (s-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**

(n = 8)

		RESPONSES				
Cluster	Item	C'e	Ce	Cu	C'e/Cu	Other
1a	l'es	75%	12.5%	0	0	12.5% su/se
2	avtobus	0	0	100%	0	0
	nos	0	0	100%	0	0
	verbas	0	0	100%	0	0
	teksas	0	0	100%	0	0
	dos	0	0	100%	0	0
	arus	0	0	100%	0	0

Table 7.22: OBJECT CLUSTERS (s-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 3**

(n = 19)

		RESPONSES				
Cluster	Item	C'e	Ce	Cu	C'e/Cu	Other
1	verbas	94.73%	0	5.26%	0	0
	l'es	63.15%	5.26%	21%	10.52%	0
2	nos	0	0	100%	0	0
	teksas	0	0	94.73%	0	5.26% NC
	avtobus	0	5.26%	89.47%	5.26%	0
	arus	15.78%	5.26%	73.68%	0	5.26% NC
	dos	10.52%	0	68.42%	0	21% NC; si; sce; stu

Group 3 subjects, as compared to speakers of Group 1 and Group 2, have enlarged the domain of palatalization to two of the s-stem items - *l'es* and *verbas* - paralleling the pattern of the majority in the adult speech community. But some speakers of Group 3 extend palatalization even further, notably to the items *arus* "ancient Roman city" and *dos* "small bag," which are non-words. Furthermore, the Group 3 response pattern includes also several responses with the intermediate form used outside the restricted two-word set. Thus, some Group 3 speakers bear a similarity in their treatment of the s-stem items to the speakers of adult Group III, inasmuch as for both groups of speakers signs of a productive use of palatalization with the s-stem items are discernible.

The l-stem words

The adult speakers

The long questionnaire contained 12 l-stem items: 8 of these were real words, and 4 were non-words. The l-stem items included 4 toponyms: 2 among the real words and 2 among the non-words.

Subject groups

Three subject groups can be established among the adult speakers: Group I with 17 members, Group II with 31 speakers, and Group III with 16 subjects (refer to Tables E.16 - E.18 for group profiles).

In Group I females outnumber males, and villagers outnumber city residents. In fact, women from the village constitute the largest segment of this group. Moreover, all the seven village women have only elementary education.

Village males, on the other hand, are best represented in Group II. And among the city residents of Group II the females are the more numerous. But, on the whole, Group II is quite representative of the adult sample in general.

Group III, however, displays the most distinctive profile of the three subject groups. Most speakers of this group have higher education; most are under the age of forty; and more of them live in the city than in the village.

Object clusterings

All three subject groups apply the palatalization pattern to some l-stem items (Tables 7.23, 7.24, 7.25). Groups I and II, however, limit the use of the pattern to three l-stem items on the list (with minor exceptions), while Group III speakers show no such restraint and extend palatalization to all of the l-stem items, including the non-words.

For Group I and II subjects palatalization affects the items *valal* "village," *stol* "table," and *kabel* "bucket." The difference between the two groups lies in the consensus

Table 7.23: OBJECT CLUSTERS (l-STEM NOUNS) FOR ADULT **SUBJECT GROUP I**
(n = 17)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	valal	76.47%	11.76%	11.76%	0	0
	stol	47%	41.17%	11.76%	0	0
	kabel	41.17%	58.82%	0	0	0
	sul	0	64.7%	5.88%	0	29.41% li; NC
2	april	5.88%	94.11%	0	0	0
	jafel	0	94.11%	5.88%	0	0
	fotbal	0	100%	0	0	0
	ural	0	100%	0	0	0
	nepal	0	100%	0	0	0
	hotel	0	100%	0	0	0
	mindil	0	100%	0	0	0
	tugal	0	100%	0	0	0

among the speakers with regard to palatalizing these three items: consensus is unanimous for Group II speakers, but much lower for Group I members. Indeed for Group I we note that for the items *stol* and *kabel* it is the no-palatalization pattern which finds strong support among half of the group members. Only the item *valal* remains for most speakers of Group I the undisputed candidate for palatalization. Group II subjects, on the other hand, have no doubts about palatalizing all three items.

For both Group I and II, however, the three-word set is the limit beyond which the palatalization pattern does not reach. But, whereas, Group II speakers make full use of the palatalization pattern within this limited domain, Group I subjects show a much weaker

Table 7.24: OBJECT CLUSTERS (l-STEM NOUNS) FOR ADULT **SUBJECT GROUP II**

(n = 31)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	stol	100%	0	0	0	0
	kabel	100%	0	0	0	0
	valal	87%	0	12.9%	0	0
2	fotbal	9.67%	87%	3.22%	0	0
	mindil	3.22%	96.77%	0	0	0
	tugal	0	96.77%	3.22%	0	0
	april	0	100%	0	0	0
	ural	0	100%	0	0	0
	nepal	0	100%	0	0	0
	hotel	0	100%	0	0	0
	sul	0	100%	0	0	0
	jafel	0	100%	0	0	0

tendency to do so, and do not exclude from this domain the pattern which is dominant for the other l-stem items, i.e., no-palatalization.

Group III speakers show the opposite tendency. They too exhibit a high consensus with respect to palatalizing certain items. But, furthermore, palatalization is extended by some speakers of Group III to other l-stem items, beyond the limits of the restricted set. Thus, all l-stem items, including the non-words, become affected by palatalization.

Table 7.25: OBJECT CLUSTERS (l-STEM NOUNS) FOR ADULT **SUBJECT GROUP III** (n = 16)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	valal	87.5%	0	12.5%	0	0
	kabel	87.5%	6.25%	6.25%	0	0
	stol	81.25%	6.25%	12.5%	0	0
	ural	75%	6.25%	18.75%	0	0
2	**mindil**	37.5%	56.25%	6.25%	0	0
	fotbal	31.25%	56.25%	12.5%	0	0
	tugal	31.25%	56.25%	12.5%	0	0
	sul	25%	62.5%	12.5%	0	0
	jafel	25%	75%	0	0	0
	nepal	18.75%	81.25%	0	0	0
	hotel	12.5%	81.25%	6.25%	0	0
	april	12.5%	75%	12.5%	0	0

On a survey of the items which are palatalized by the highest number of Group III members, we find the same three words which are palatalized by the rest of the adult subjects, as well as the additional item *ural* "Ural mountains," a toponym. The domain of items to which palatalization is consistently applied is, therefore, larger for Group III speakers than for other adults. Consequently, the pattern itself achieves a higher prominence with Group III subjects, which, in turn, makes it of easier access for wider and more productive use.

The non-adult informants

The non-adult subjects were presented 7 l-stem items: 5 real words and 2 non-words. The l-stem items included 2 toponyms: 1 among the real words, and 1 among the non-words.

Subject groups

On the basis of the individual response patterns the non-adult informants divide into three groups. Group I includes 14 subjects, Group 2 numbers 8 youths, and Group 3 consists of 15 speakers (refer to Tables F.11-F.13).

City residents and the youngest informants are the most numerous in Group 1. In fact, the village residents of this group are all first graders. The city residents are slightly older. Within this young group it is the NS girls that are best represented.

Group 2, on the other hand, is composed mostly of males. There are only two females in this group.

In Group 3 RK residents and older youth informants predominate. Most of the high school students are found in this group.

Object clusterings

The differences between the three subject groups arise from differences in the extent of use of the palatalization pattern. Where Group 1 subjects make virtually no use of this pattern, Group 2 and 3 speakers do so quite readily. But the number of items affected by this pattern is different for Group 2 and 3 speakers (refer to Tables 7.26, 7.27, 7.28).

The no-palatalization pattern is the only pattern used by Group 1 speakers for the l-stem items. Only three speakers diverge from this general approach in the case of the item *valal* "village." But otherwise no such attempts occur among the Group 1 youths.

For Group 2 speakers a domain of items to which palatalization is applied is evident.

Table 7.26: OBJECT CLUSTERS (l-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**

(n = 14)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
	valal	14.28%	78.57%	7.14%	0	0
	stol	0	100%	0	0	0
	ural	0	100%	0	0	0
	kabel	0	100%	0	0	0
	hotel	0	100%	0	0	0
	sul	0	100%	0	0	0
	tugal	0	100%	0	0	0

Table 7.27: OBJECT CLUSTERS (l-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**

(n = 8)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	stol	75%	25%	0	0	0
	kabel	62.5%	25%	0	0	12.5% lu/l'u
2	**tugal**	25%	75%	0	0	0
	ural	12.5%	87.5%	0	0	0
	valal	0	100%	0	0	0
	hotel	0	100%	0	0	0
	sul	0	100%	0	0	0

Table 7.28: OBJECT CLUSTERS (l-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 3**

(n = 15)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	valal	86.6%	0	6.6%	0	6.6% le/l'e
	stol	80%	6.6%	13.3%	0	0
	kabel	60%	40%	0	0	0
2	ural	40%	53.3%	0	0	6.6% NC
	tugal	33.3%	53.3%	6.6%	0	6.6% NR
	sul	26.6%	46.6%	6.6%	0	20% li; NC
	hotel	0	100%	0	0	0

Comprising this domain are the two items *stol* "table" and *kabel* "bucket," and most members of Group 2 produce the two items with palatalized responses. The non-word *tugal* "tree, native to Africa" is produced by two NS males with palatalization, but generally, the other items are not affected by the palatalization pattern.

The palatalization pattern is used most extensively by Group 3 speakers. The domain to which this pattern is applied includes three items - the same two items as for Group 2, and the additional item *valal*. Most Group 3 speakers palatalize the three items in this domain. Some Group 3 members, however, do not confine palatalization to only these three items. Instead they extend palatalization even further, foremost to the toponym *ural*, followed by the two non-words *tugal* and *sul* "river in Nepal." The response pattern of Group 3 speakers, therefore, shows parallels not only to the response pattern of adult Group II, emerging from the similarity in size and treatment of Cluster 1 items, but also to the response pattern of adult Group III, since in both groups (Group 3 and Group III) there are signs of a productive use of the palatalization pattern with l-stem items.

The n-stem words

The adult speakers

There were 17 n-stem items on the long questionnaire: 13 real words and 4 non-words. The n-stem items included 7 toponyms: 5 among the real words and 2 among the non-words.

Subject groups

The adult speakers divide into three groups on the basis of their response patterns. We find 16 subjects in Group I, 31 speakers in Group II, and 17 informants in Group III (see Tables E.19-E.21).

In Group I we note a slight imbalance among the subjects with respect to their place of residence: more members of this group are village, rather than city residents. This is particularly clear among the females: the village women outnumber the city females three to one. We note further, that most of the village women have only elementary education (five out of six).

Group II is the largest and most representative of the speech community at large. We observe, however, that city males are under-represented in this group. This is particularly evident for NS males under the age of forty - none join this group.

The majority of the NS males under forty are found instead in Group III. In this group males, and particularly city males, predominate. Most speakers of Group III are under the age of forty, and speakers with higher education are in the majority.

Object clusterings

The response patterns of the three subject groups (Tables 7.29, 7.30, 7.31) reveal an increase in the use of palatalization for the n-stem items from Group I through Group III. This increase is pyramid-shaped: every group retains palatalization in those items

Table 7.29: OBJECT CLUSTERS (n-STEM NOUNS) FOR ADULT **SUBJECT GROUP I**

(n = 16)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	orman	62.5%	31.25%	6.25%	0	0
	komin	31.25%	43.75%	25%	0	0
2	**faston**	6.25%	93.75%	0	0	0
	ml'in	0	93.75%	6.25%	0	0
	baran	0	100%	0	0	0
	hajziban	0	100%	0	0	0
	okean	0	100%	0	0	0
	berlin	0	100%	0	0	0
	iran	0	100%	0	0	0
	sudan	0	100%	0	0	0
	slon	0	100%	0	0	0
	magazin	0	100%	0	0	0
	london	0	100%	0	0	0
	petrovaradin	0	100%	0	0	0
	arun	0	100%	0	0	0
	rašan	0	100%	0	0	0
	sturan	0	100%	0	0	0

which are palatalized by the previous group and, at the same time, extends the pattern to new items. In this process the "core" items are palatalized by evermore speakers of each consecutive group.

The two "core" items among the n-stems on our list are *orman* "wardrobe, commode" and *komin* "chimney." The consensus among Group I speakers with respect to palatalizing these two items is the lowest in the adult sample. It is notably higher among Group II speakers, and highest among speakers of Group III.

Group I speakers do not extend the palatalization pattern beyond the limits of this two-word set. Group II speakers, on the other hand, show numerous attempts at doing this. Several Group II subjects include also the item *magazin* "warehouse" into the domain of

Table 7.30: OBJECT CLUSTERS (n-STEM NOUNS) FOR ADULT **SUBJECT GROUP II**

(n = 31)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	orman	74.19%	6.45%	19.35%	0	0
	komin	67.74%	16.12%	16.12%	0	0
1b	baran	9.67%	41.9%	9.67%	19.35%	19.35% nu/ novi; n'e/nu/novi
	slon	9.67%	58%	12.9%	6.45%	12.9% nu/novi
2	magazin	29%	61.29%	9.67%	0	0
	petrovaradin	19.35%	74.19%	3.2%	0	3.2% NC
	sturan	9.67%	87%	3.22%	0	0
	hajziban	9.67%	90.3%	0	0	0
	ml'in	6.45%	93.54%	0	0	0
	berlin	3.22%	93.54%	3.22%	0	0
	arun	3.22%	93.54%	3.22%	0	0
	london	3.22%	96.77%	0	0	0
	iran	0	96.77%	3.22%	0	0
	faston	0	96.77%	3.22%	0	0
	okean	0	100%	0	0	0
	sudan	0	100%	0	0	0
	rašan	0	100%	0	0	0

palatalization. The toponym *petrovaradin* (district of Novi Sad) is drawn by some speakers into this domain, as well. Several younger speakers of Group II (all in their twenties) palatalize two non-words *sturan* "sacred book in India" and *arun* "ancient Persian city."

The most extensive use of palatalization, however, is evident among speakers of Group III. For this group the palatalization pattern affects, to at least some extent, all the n-stem items on our list. Moreover, the use of palatalization is not confined to a few subjects of Group III, but is characteristic of a large portion of group members: approximately half of

Table 7.31: OBJECT CLUSTERS (n-STEM NOUNS) FOR ADULT **SUBJECT GROUP III**

(n = 17)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1a	orman	94.11%	0	5.88%	0	0
	komin	82.35%	0	17.64%	0	0
1b	magazin	58.82%	29.4%	11.76%	0	0
	hajziban	58.82%	35.29%	5.88%	0	0
	berlin	47%	29.4%	23.52%	0	0
	petrovaradin	47%	47%	5.88%	0	0
	okean	41.17%	52.94%	5.88%	0	0
	london	35.29%	35.29%	29.4%	0	0
	baran	52.94%	11.76%	0	5.88%	29.4% nu/novi; n'e/novi
	slon	35.29%	29.4%	5.88%	17.64%	11.76% nu/novi; n'e/novi
2	iran	29.4%	64.7%	5.88%	0	0
	ml'in	29.4%	70.58%	0	0	0
	rasan	29.4%	70.58%	0	0	0
	sudan	29.4%	70.58%	0	0	0
	arun	23.52%	76.47%	0	0	0
	faston	23.52%	76.47%	0	0	0
	sturan	11.76%	82.35%	5.88%	0	0

the n-stem items (Clusters 1a and 1b) are palatalized by the majority of Group III speakers (we combine both the "C'e" and the "C'e/Cu" responses in this count). Although the rest of the items are palatalized by fewer speakers, the number of these speakers is not negligible.

We note that the three toponyms *berlin*, *petrovaradin*, and *london* are produced by the majority of Group III subjects with palatalization. The number of speakers who palatalize the remaining toponyms among the real words - *iran* and *sudan* - is lower, but also not negligible. All the non-words on the list are palatalized by at least some speakers of Group III.

Thus, in comparison with speakers of the other two groups, Group III members have a large domain of n-stem items to which the palatalization pattern is applied. The toponyms enter into this domain differentially, on an item-by-item basis, although certain toponyms are drawn into the palatalization domain by more individuals than is the case for other toponyms. The same item-by-item progression can be noted for the non-words. Not all speakers extend the palatalization pattern to the non-words, but it is noteworthy that some do. And, finally, we note, that the two items which are palatalized by the largest number of speakers of Group III are those which are palatalized by the entire community - *orman* "wardrobe, commode" and *komin* "chimney"- two real words which are not marked as toponyms.

The non-adult informants

The short questionnaire contained 8 n-stem items: 6 real words and 2 non-words. Among the n-stems there were 3 toponyms on the short questionnaire: 2 among the real words and 1 among the non-words.

Subject groups

Three subject groups can be distinguished among the non-adult speakers. Group I consists of 11 speakers, Group 2 includes 17 informants, and Group 3 has 9 members (see Tables F.14-F.16).

Most speakers of Group 1 are in the lowest grade level. There are some speakers from the intermediate level, but none from the high school grades.

Group 2 subjects are predominantly city residents. Subjects of this group are distributed through the three grade levels rather equally, although the city residents are somewhat older than the village youths.

Group 3 is composed almost exclusively of older youths from the village. The only city resident in this group is a male in the 12th grade.

Object clusterings

Only speakers of Groups 2 and 3 apply the palatalization pattern to n-stem items. The differences between the two groups lie in the number of items which are produced with this pattern (Tables 7.32, 7.33, 7.34).

Group 1 subjects make no use of the palatalization pattern with the n-stem items. For the majority of Group 2 speakers palatalization is confined to the item *orman* "wardrobe, commode." Some Group 2 members also palatalize *komin* "chimney," and we find several other n-stem items, including the two non-words, produced with palatalization by some individuals. But the dominant pattern for Group 2 speakers is no-palatalization for n-stem items, with the exception of the word *orman* .

For Group 3 subjects the no-palatalization and the palatalization patterns exist on equal terms. The palatalization pattern is dominant for almost all members of Group 3 in a domain composed of four items (Cluster 1). Here we find one toponym and one non-word, in addition to the two "core" items palatalized also by the adult speakers. Cluster 2 items belong to the no-palatalization domain for many Group 3 speakers. But others have incorporated these items into the palatalization domain, as well. This concerns foremost the toponym *petrovaradin* (district of Novi Sad), followed by the non-word *rašan* "river in India," also a toponym. For these speakers then the palatalization pattern indeed is the prevailing one for n-stem items and may be used productively in the case of new words.

Table 7.32: OBJECT CLUSTERS (n-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 1**

(n = 11)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
	hajziban	0	100%	0	0	0
	komin	0	100%	0	0	0
	ml'in	0	100%	0	0	0
	orman	0	100%	0	0	0
	london	0	100%	0	0	0
	rašan	0	100%	0	0	0
	faston	0	100%	0	0	0
	petrovaradin	0	90.9%	0	0	9.09% NR

Table 7.33: OBJECT CLUSTERS (n-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 2**

(n = 17)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	orman	76.47%	23.52%	0	0	0
2	komin	35.29%	52.94%	11.76%	0	0
	faston	11.76%	82.35%	0	0	5.88% NC
	rašan	5.88%	82.35%	0	0	11.76% nu/ni; NC
	petrovaradin	5.88%	88.23%	0	0	5.88% NR
	hajziban	5.88%	94.11%	0	0	0
	ml'in	0	94.11%	0	0	5.88% nari
	london	0	100%	0	0	0

Table 7.34: OBJECT CLUSTERS (n-STEM NOUNS) FOR NON-ADULT **SUBJECT GROUP 3**

(n = 9)

		RESPONSES				
Cluster	Item	C'e	Cu	C'e/Cu	Covi	Other
1	komin	100%	0	0	0	0
	orman	100%	0	0	0	0
	london	88.8%	11.1%	0	0	0
	faston	77.7%	22.2%	0	0	0
2	petrovaradin	44.4%	55.5%	0	0	0
	rašan	33.3%	66.6%	0	0	0
	hajziban	22.2%	77.7%	0	0	0
	ml'in	11.1%	88.8%	0	0	0

In their treatment of the n-stem items Group 3 subjects compare most closely to the speakers of adult Group III, where we noted a large domain of items reserved for palatalization. Moreover, in both the non-adult and the adult groups we find speakers who apply the palatalization pattern to non-words. But, as our limited speaker and word sample suggests, the non-adults may be even more predisposed to doing this than the adults.

Table 7.35: OVERVIEW OF ADULT SUBJECT GROUPS AND THEIR USE OF "DENTAL PALATALIZATION"

Subject Groups	Items Palatalized
d-stem words	
I - more speakers over 40; more RK residents; more with elementary education	*hvozd* for some speakers also *l'ad*
II - representative for NS speakers; RK mostly under 40	*hvozd, l'ad, novi sad* for some speakers *beograd, šid*
III - NS males under forty; speakers with higher education	wide range of items palatalized by majority; palatalization affects all items
t-stem words	
I - slightly older group for NS speakers; otherwise, fairly representative	*švet, xvost, xribet, život, most*
II - representative of adult sample	*švet, xvost, xribet, život, most* *plot ;* more speakers palatalize
III - NS under forty predominate; speakers with higher education	wide range of items palatalized by majority; palatalization affects almost all items
z-stem words	
I - all speakers not in Group II	no palatalization
II - NS under forty with higher education predominate	palatalization used widely by some; intermediate form used by others for non-words

(table continued on next page)

Table 7.35: OVERVIEW OF ADULT SUBJECT GROUPS AND THEIR USE OF "DENTAL PALATALIZATION"

(continued)

Subject Groups	Items Palatalized
s-stem words	
I - more males; more speakers under 50; females have elementary education	*l'es* palatalized by majority
II - representative of adult sample	*l'es* and *verbas* palatalized by most
III - NS residents; young; most have higher education	*l'es* and *verbas* palatalized by all; palatalization extended further, also to non-words, by a few; intermediate pattern used by a few
l-stem words	
I - females and RK residents dominant; RK females have elementary education	*valal* palatalized by most; *stol* and *kabel* palatalized by half
II - quite representative of adult sample; slightly more RK males	*valal, stol, kabel* palatalized by all
III - NS residents under forty with higher education	*valal, stol, kabel, ural* palatalized by most speakers; palatalization affects all items
n-stem words	
I - RK residents predominate; more RK females with elementary education	*orman* and *komin* palatalized by half
II - quite representative of adult sample; no NS males under forty	*orman* and *komin* palatalized by most speakers; some items beyond this range palatalized by a few
III - males, NS residents, under forty with higher education predominate	wide range of items palatalized by majority; palatalization affects all items

Discussion of the "dental palatalization" pattern

The adult speakers

In their treatment of the six dental-stem noun groupings the adult speakers of our sample consistently show a three-way division. The one exception occurs with the z-stem items, where only two approaches are evident among the adults. (An overview of the subject groups and their use of the palatalization pattern with the dental-stem items is presented in Table 7.35.)

Although the subject groups established for each of the six dental-stem noun groupings exhibit distinct response patterns, these patterns, when compared across the dental-stems noun groupings, share systematic similarities. This, in turn, permits us to make generalizations about the palatalization pattern as it applies to the entire set of dental-stem nouns, and not only to individual dental-stem noun groupings.

The subject groups themselves can be seen to share systematic similarities when the entire dental-stem noun set is taken into account. Thus, certain social variables assume more importance than others since they regularly reappear in the description of the subject groups. This, then, permits us to conclude that the variability in the use of the "dental palatalization" pattern is not completely arbitrary, but can be associated to some degree with certain speaker groups. These, in turn, can be described by the social variables used in the study.

The subject group which retains the most distinctive profile across all six dental-stem noun groupings is Group III (Group II in the case of the z-stems). Here we find the four social variables - gender, residence, age, and education - each playing an important role in describing a group that, generally, includes more males, more city residents, more adults under the age of forty, and more speakers with higher education.

Group I and II (amalgamated in the case of the z-stems), on the other hand, have less distinctive profiles and are, on the whole, more representative of the adult sample. This is particularly true of Group II. For Group I we observe slight imbalances vis-à-vis the entire sample, which, in some cases (for d-stems and t-stems), result in a group of somewhat older speakers or, in other cases (l-stems, n-stems, and, to some degree, s-stems), portray a group with more village residents, and more females with only elementary education.

The response patterns of the three groups assume the same general contours for each of the dental-stem noun groupings, such that in every case (with the exception of the z-stems) Group I speakers restrict the palatalization pattern to only a few items, Group II speakers have a somewhat wider, but still a limited domain of palatalization, while Group III speakers extend palatalization furthest, and use this pattern even with non-words. The progression from least to most palatalization (Group I through Group III) proceeds in orderly fashion in each case, permeating through the lexicon of the speakers of the different groups as if through a pyramid: with each consecutive group new items are drawn into the palatalization domain, within which the items palatalized by the preceding group are also retained (the "Guttman effect").

We note that these shared "core" items retained for palatalization by every subject group do not form a set which could be viewed as semantically cohesive. Instead, they seem to fall within the realm of vernacular vocabulary, constituting items with which every language user would be well acquainted. We can hypothesize that several of these items, e.g., *švet, život, most, plot, l'es, valal, stol, orman* ("world," "life," "bridge," "fence," "forest," "village," "table," "wardrobe, commode") tend to occur more frequently in the locative case than in other cases, denoting in some general sense a place where an action might take place. The set of these items seems to be limited, however, by historical considerations, since such words as ***hotel*** "hotel" and ***avtobus*** "bus," clearly of more recent vintage, which also might be expected to appear more frequently in the locative case due to the above-mentioned considerations, are not incoporated into the "core" set.

In the case of some dental-stem noun groupings we find among the shared "core" items also a few toponyms. We note, however, that the sharing of these toponyms takes place between Groups II and III, and leaves Group I unaffected. The toponyms which we find in this "core" set denote places in the direct vicinity of the Rusyn language users, e.g. *novi sad, beograd, šid, verbas, petrovaradin* . This suggests to us that these items are also very familiar to adult Rusyn speakers undoubtedly as a result of their frequent occurrence in speech.

The pyramid-shaped contour of the use of the palatalization pattern, observed among the adult speakers, results not only in quantitative differences between the subject groups. Whereas this may be true of the differences between the speakers of Groups I and II, the speakers of Group III diverge from the rest of the speech community in a qualitatively different way: they are the only speakers in the adult sample (with the exception of some Group II speakers for the n-stems) who extend palatalization also to the non-words. Therefore, Group III subjects are the only speakers in our sample for whom the "dental palatalization" pattern can be said to be productive. We note that not all speakers of Group III use the pattern productively. But it is only within Group III that productive use of the pattern is found. Bearing in mind, that Group III speakers are also those with the largest domain of palatalization, we conclude that the consistent occurrence of palatalization in a higher number of items also simultaneously enables the use of this pattern in a productive manner. Thus, the larger the number of items consistently palatalized, i.e., the higher the type frequency, the higher the probability that the "dental palatalization" pattern will be productive.

The pyramid-shaped contour describes the use of the palatalization pattern for all of the dental-stem noun groupings except the z-stems. Here we find no evidence of the palatalization pattern in the case of most adult speakers (Group I), while in the case of the well-profiled Group II (which corresponds to Group III for the other dental-stems) we see the expected productive use of the pattern by some of the group members. The other Group II (III) members resort to a new pattern in the case of the z-stems, which we have labelled as intermediate between the no-palatalization and the palatalization patterns. This intermediate pattern is produced by some Group III members also in the case of s-stem items.

Summing up, we can say that, on the basis of our data for the adult informants, we have seen that the "dental palatalization" pattern is productive for some speakers of the speech community and unproductive for other speakers of the same community. Whereas it is unproductive for the majority of this community, it is productive for a group of speakers who are generally its youngest and best educated members. Most of them are males, and most reside in the city. We have seen that the productivity of the "dental palatalization" pattern is facilitated through a larger number of items to which the pattern is consistently applied. Thus, type freqency plays a role in assuring the productivity of "dental palatalization." Furthermore, we have observed that items which are most often produced with the palatalization pattern belong to the vernacular vocabulary and, hence, are very familiar to the language users. Several toponyms denoting nearby places are also included among the most frequently palatalized items. We hypothesize that these toponyms also are very familiar to adult speakers as a result of their high occurrence in speech. Thus, the high degree of familiarity of these toponyms, a consequence of their token frequency, contributes, at least in part, to their inclusion into the set of "core" items retained for palatalization by most speakers. And, finally, we note that for speakers for whom the "dental palatalization" pattern is unproductive (Groups I and II) it is also completely missing from the z-stem items. Thus, the connections between the noun groupings of the dental-stem set which could be made based on the phonological similarity of the groupings are evidently not accessed by these speakers. This is not the case, however, for speakers of Group III for whom, as mentioned, the "dental palatalization" pattern is indeed productive. For these speakers the phonological connections between the dental-stems are accessible, and the pattern (sometimes in an intermediate form) is used with items of the entire dental-stem noun set.

The non-adult informants

As the data collected from our non-adult informants is of immediate interest to us only to the extent that it relates to observations made for the adult speakers, we restrict ourselves to two remarks. We have observed that for every dental-stem noun grouping the oldest non-adult informants from the village, often including more than expected females, have been identified as a unique group on the basis of their treatment of the dental-stem items. We have referred to this group as Group 3, and have noted the consistency with which the response patterns of this non-adult group resemble, in the case of each of the dental-stem noun groupings, the response patterns of adult Group III. The similarities relate both to the domain of items palatalized, which for the two groups is larger than for the other groups, as well as to the use of the palatalization pattern with non-words. Thus, for some speakers of non-adult Group 3, as for some speakers of adult Group III, the "dental palatalization" pattern emerges as productive. This, in turn, permits us to state that the distinctive use of the "dental palatalization" pattern by the adults of Group III is not merely a speech marker, characteristic of a segment of the community, but may indeed be a linguistic process which is gaining supporters, as it were, foremost among the oldest youths in the village, who have access to full-time schooling in the Rusyn language.

One further remark on the non-adult data concerns the response patterns of Group 1, where we observed the lowest frequency of use of the "dental palatalization" pattern. It is noteworthy that, whereas no use of this pattern is made by this group in the case of the l-stems, n-stems, s-stems, and z-stems (for the z-stem items Group 1 includes all the non-adults who are not in Group 2), the palatalization pattern does appear in the case of the d-stem and the t-stem items. Whatever the reasons for this may be, e.g. higher token frequency of the d-stems and the t-stems in comparison with the items of the other dental-stem groupings, it is significant that palatalization appears for Group 1 speakers (who are often the youngest in the sample) among both the d-stem and the t-stem items, and not only within one or the other noun grouping. We can infer, therefore, that where the phonetic differences are minimal the phonological connections may be very strong.

Comrie's phonetic distance and the single rule hypothesis

Our data on the use of the "dental palatalization" pattern indeed shed some light on the question of whether this pattern can be justifiably described by a single rule, i.e., whether the use of this pattern can be viewed as a consequence of a generalization, internalized by the speakers, which extends over all six dental-stem noun groupings. Our data permit us also to examine the role that phonetic distance between alternating segments may play in the loss, or conversely, in the acquisition or appearance of an alternation within a morphophonemic alternation set.

With regard to the question of a single rule, we have seen that speakers of adult Group III, as well as non-adult Group 3, indeed apply the "dental palatalization" pattern to items within the entire dental-stem set, while the remaining adult speakers (we omit the other non-adult informants from this discussion) use this pattern with all the dental-stem noun groupings except the z-stems. Thus, where Group III and Group 3 subjects could be seen to access the phonological connections binding the six dental-stem noun groupings, and, thereby, draw the conclusions of a single pattern, the remaining adults cannot be seen as doing this. We have previously concluded that for speakers of Group III and Group 3 the "dental palatalization" pattern is productive, while for the other speakers of the adult sample it is unproductive. We can now say, that for those speakers for whom the palatalization pattern is productive it is also most "rule-like," and we can be justified in describing it by a single rule, while for speakers for whom the pattern is unproductive, even if manifested in numerous items, the entire range of phonological connections is not accessed and, therefore, the single rule description is not warranted.

Earlier in this chapter we proposed a corollary to Comrie's hypothesis about the important role of phonetic distance in determining the dynamics of morphophonemic alternation sets, which predicts that alternation pairs with alternating segments that do not differ with respect to phonetic distance should be treated in like manner by users of the language. The "dental palatalization" pattern affects two such pairs: the d-stems and the t-stems, on the one hand, and the z-stems and the s-stems, on the other. If the corollary to Comrie's hypothesis is true, then we should find no differences in the patterning between the d-stems and the t-stems, and no differences in the patterning between the z-stem and the s-stem items.

This indeed can be observed in the case of those speakers for whom the "dental palatalization" pattern is productive. The response patterns for the d-stem and t-stem items can be said to be similar, as can the response patterns for the z-stems and the s-stems. Moreover, in the case of the z- and s-stems we find the use of an intermediate pattern. This latter fact not only seems to substantiate the corollary to Comrie's hypothesis about similar treatment for alternation pairs whose segments share the same phonetic distance. The production of an intermediate pattern may indeed be an indication that the phonetic distance between the alternating segments of the z-stems and the s-stems may be greater than the phonetic distance between the alternating segments of the other alternation pairs, and in attempting to traverse this distance some speakers have arrived only midway.

The similarity in the treatment by non-adult Group 1 of the d-stems and the t-stems, as opposed to the l-stems, n-stems, z-stems, and the s-stems, also lends support to the proposed importance of phonetic distance in determining the inner dynamics of morphophonemic alternation sets. In the case of our young non-adult informants their data indicate that phonetic distance may play an important role not only during the process of loss of parts of morphophonemic alternation sets (as Comrie's hypothesis predicts), but also during the process of acquiring such alternation sets. During this latter process we can predict, based on the non-adult data, that alternation pairs, whose alternating segments do not differ with respect to phonetic distance, may also be acquired together, rather than separately.

However, the data for our adult informants for whom the "dental palatalization" pattern is not productive seems to contradict Comrie's hypothesis and our corollary to this hypothesis. The contradiction emerges from the treatment by these adult speakers of the z-stem and the s-stem items: in the case of the s-stems palatalization is apparent, while in the case of the z-stem items it is totally missing. If the appearance of the intermediate pattern (see discussion above) is indeed a consequence of a comparatively larger phonetic distance, which, in turn, paves the way for the loss of an alternation, the corollary to Comrie's hypothesis would predict that this loss should be suffered by both the z- and the s-stems. Instead the loss is one-sided, and, thus, seems to cast doubt on the power of phonetic distance in this act.

We propose that there is another "conspiring" factor which, coupled with the factor of phonetic distance, may affect the z-stem items more harshly than the s-stem items, particularly for those speakers for whom the "dental palatalization" pattern is not productive and is, therefore, not generalizable by a single rule. This "conspiring" factor is the type frequency of the z-stem items: among all the dental-stem items, the z-stems are the least numerous. We have seen that type frequency, together with token frequency of individual items, play an important role in securing the productivity of "dental palatalization." In the case of the z-stem items, whose type frequency (and we suspect the frequency of the individual tokens) is lowest among the dental-stems, this factor, together with the factor of phonetic distance, may "conspire" to exterminate the palatalization pattern from these items altogether. In the case of the s-stem items this same attempt is not fully successful due to the higher number of these items, i.e., their higher type frequency (as well as token frequency).

Thus, we can conclude, that phonetic distance may indeed play an important role in determining the inner dynamics of morphophonemic alternation sets. But, as our data suggest, it may not be the only factor in this process. The number of items in a specific alternation may also be critical, such that the lower the number of items, i.e., the lower the type frequency, and the greater the phonetic distance between alternating segments of the alternation, the higher the probability that the alternation may eventually be lost.

Tiersma's "local markedness" hypothesis

According to the theory of "local markedness," the toponyms on our list could be expected to appear with the "dental palatalization" pattern more frequently than the other items, since, as suggested by Tiersma, nouns denoting places adhere to the conventions of local markedness when they occur in the locative case. Thus, in the locative case, toponyms should become locally unmarked and, as a result, more tolerant of irregularity, i.e., more likely to preserve morphophonemic alternations.

Our results indicate that among the "core" items retained for palatalization by most speakers there indeed are some toponyms. But although toponyms were included among the items of every dental-stem noun grouping, we do not find them among the "core" items of every such grouping. Instead, we find some toponyms among the "core" items of only the d-stems and the s-stems, and, moreover, these are palatalized only by speakers of Groups II and III. To be sure, the other toponyms on our list are palatalized by members of Group III. But for speakers of this group the palatalization pattern is apparent within a wide domain of items, which is not composed exclusively, or even foremost, of toponyms.

Furthermore, we noted that the toponyms which appear among the most frequently palatalized items denote places in the direct vicinity of the Rusyn language users, e.g *novi sad, beograd, šid, verbas, petrovaradin* . Thus, we proposed that these toponyms are very familiar to the language users, and that this high degree of familiarity - a consequence of their high token frequency - is an important factor contributing to pattern application.

What then is to become of Tiersma's "local markedness" hypothesis? Has our data delivered a fatal blow to it, rendering it unviable? Certainly not. After all, toponyms were chosen for the "dental palatalization" pattern, even if selectively. To our mind, Tiersma's hypothesis remains valid, since it embodies a general principle about language, namely, that meaning (to a great degree) determines form. Thus, it is the meaning of a word, or, as Tiersma puts it, the "real-world considerations" (op.cit.:834) which provide the basis for defining the unmarked vs. the marked form of a word. We note that among the "core" items retained for palatalization by most speakers we do find words that denote, in some general sense, a place where an action might take place, e.g., *švet, život, most, plot, l'es, valal, stol, orman* ("world," "life," "bridge," "fence," "forest," "village," "table," "wardrobe, commode"). These words could probably be considered as "locally unmarked" in the locative case.

In the process of defining the unmarked vs. the marked form, the factor of frequency cannot be underestimated. After all, it is precisely the unmarked form which is the more frequent one, and it is the higher frequency of the unmarked form which aids in preserving its morphological/morphophonemic irregularity. Tiersma himself acknowledges the delicate interplay between form/meaning and frequency. But he points out, following, as he explains, Greenberg, that "frequency is itself but a symptom," and "does nothing more than reflect the more basic nature of one particular morphological category as opposed to another" (847).

To our mind, rejecting frequency as an independent factor may be unwarranted in this case, since indeed the factor of frequency may help explain the irregular nature of the "local markedness" hypothesis. Addressing the question of exceptions to the proposed theory, Tiersma points out that "local markedness is a matter of degree rather than an absolute," and, thus, "it is not true that a particular class of words MUST show the effects of local markedness, but rather that it MAY do so" (ibid.).

We feel that the degree to which "local markedness" is manifested in a particular class of words may, at least partially, be the result of the frequency of occurrence of the individual items in the class, such that the higher the (token) frequency, the more familiar the item becomes to the language user. Familiarity with a word (and here we mean comprehending the meaning of the word) must be a prerequisite for its use.

With this in mind, we would suggest that the language user's degree of familiarity with a given lexical item, shaped by the item's token frequency, exerts an influence on the applicability of the conventions of "local markedness" to the item in question. Such a modification of Tiersma's "local markedness" hypothesis helps explain the selective approach of the Rusyn speakers to the toponyms on our word list.

Summary

Our data on the use of the "dental palatalization" pattern reveal that this pattern is productive for some speakers of the speech community and unproductive for other speakers of the same community. It is productive for a group of adult speakers who are predominantly city residents, most of them are males, and most are younger and better educated than other members of the community. It is also productive for the oldest non-adult speakers in our sample who reside in the village. This leads us to predict that "dental palatalization" may indeed be gaining momentum within the Rusyn speech community.

We noted that for the majority of speakers, for whom "dental palatalization" is unproductive, this pattern is restricted to a few lexical items which can be classified as vernacular words, and, as such, are very familiar to the language users. For the group of speakers for whom "dental palatalization" is productive, however, the pattern is applied to a large number of lexical items (classifiable as both vernacular and learned words) of all six dental-stem noun groupings. The lexical sets which are reserved for palatalization by the individual subject groups differ in an orderly fashion from one another, such that each group enlarges on the set of the previous group. Thus, some words are palatalized by most speakers. We conclude that the retention of the pattern is assured by certain words which are very familiar to speakers. But whereas individual tokens are important in the retention of the pattern, the productivity of the pattern is secured through a combination of token and type frequencies.

Furthermore, we were able to state that for those speakers for whom "dental palatalization" is productive we can be justified in describing this pattern by a single rule, since the speakers indeed seem to bind the six dental-stem noun groupings on the basis of their phonological similarity. This, however, does not happen in the case of speakers for whom "dental palatalization" is unproductive. For these speakers the single rule description is not warranted. We also noted that the factor of the phonetic distance between alternating segments of morphophonemic alternations may indeed play an important role in determining the dynamics of such alternation sets. But we observed that in this process phonetic distance may not be the only factor, and may be joined by the factor of type frequency.

And, finally, we suggested that token frequency may indeed play an independent role in determining the applicability of the conventions of "local markedness." An increase in (token) frequency results in a higher degree of familiarity with an item paving the way for the application of the principles of "local markedness." Thus, a dynamic interplay between frequency and meaning is proposed.

CHAPTER EIGHT
CONCLUSION

The main goal of this study was to gain an insight into processes associated with morphophonemic variability, productivity, and change. In Chapters Two and Three we outlined two models which, in our view, provide a solid theoretical framework for achieving this goal - the sociolinguistic model of sound change elaborated by William Labov, and the analogy-based model of morphology proposed by Joan Bybee. We also presented the results of our own investigation of two morphophonemic alternation patterns in Rusyn - the "velar palatalization" and the "dental palatalization" patterns.

In this chapter we combine the major conclusions with regard to both alternation patterns, and attempt an interpretation. Subsequently, we relate some of the insights gained from our investigation to the models adopted as the theoretical framework.

Morphophonemic variability, productivity, and change

Our study of the two morphophonemic alternation patterns in Rusyn emerged from the premise that morphophonemics should indeed be accorded a legitimate status in linguistic theory, describing as it were a transitional level between phonology and morphology. The results of our analysis of the two alternations in Rusyn have shown that the span of morphophonemics as a bridge between linguistic levels is even wider than described heretofore, and extends not only between phonology and morphology, but may reach even into semantics. This was particularly evident in the case of the "velar palatalization" pattern, whose application, for most speakers in the sample, was conditioned by semantic factors. Moreover, the results of our study have dispelled any doubts about the possible productivity of morphophonemic alternations - productivity was established for both the "velar palatalization" pattern, as well as the "dental palatalization" pattern.

Variability

With these findings, however, we were at once confronted with a vast variability among the speakers in their use of both patterns. In the case of "velar palatalization," variability emerged from differences in the division of the semantic space by speakers. This, in turn, implied the existence, or rather, co-existence of (at least) two norms within the speech community, which did not impair communication since these norms were mutually intelligible. One norm, however, was more complex than the other, and this created ambivalence and resulted in variation in the output of those speakers who subscribed to it. We subsequently concluded that, whereas there may have been two overarching norms, these, in turn, had many nuances which permitted us to speak of a multitude of norms. Within these norms certain words loomed more prominently than others inasmuch as the "velar palatalization" pattern applied to them more often than not. A hierarchy of individual words, dominated by a hierarchy of semantic features, was established.

In the case of the "dental palatalization" pattern, where semantic considerations played a lesser role, variability in the speech community occurred in an orderly fashion, such that, when groups of speakers were compared, the number of items palatalized by them increased in pyramid style, i.e., each group enlarged on the repertoire of the previous group (the "Guttman effect"). Once again certain words, which most speakers targeted for the "dental palatalization" pattern, could be seen as forming a basis for the pattern's existence.

As in the case of the "velar palatalization" pattern, so too in the case of the "dental palatalization" pattern, the variation among speakers was attributable to the existence of multiple norms. For the latter pattern, however, the multiplicity of norms did not arise foremost from differences in the division of the semantic space, but rather from apparent differences in the strength of phonological connections which speakers formed among the dental-stem nouns. Speakers who made the most abundant use of the pattern for any one of the dental-stem noun groupings, were also those who extended the pattern to all six dental-stems. On the other hand, the entire dental-stem set was not embraced by those speakers who made very restricted use of the pattern within a given dental-stem noun grouping. We hypothesized that whereas for the former group of speakers the phonological connections between the dental-stem items were strong, enabling the extension of these connections throughout the entire dental-stem alternation set, for the latter group of speakers the words targeted for "dental palatalization" were only weakly connected, thus, discouraging access to the entire set of phonologically similar items.

We were able to observe several factors which influence the process of solidifying the phonological connections between items of a morphophonemic alternation pattern. The first of these was the factor of phonetic distance between alternating segments of a morphophonemic alternation pattern. We noted that if there exist pairs of alternations whose alternating segments do not differ with respect to the phonetic distance which separates them (e.g. the d-stems and the t-stems, on the one hand, and the z-stems and the s-stems, on the other) then the morphophonemic alternation pattern is more likely to appear in both members of the pair, rather than just in one. This leads us to conclude that the shared phonetic similarity between such pairs aids in establishing the phonological connections between them. If, however, one of the pairs is not represented in the lexicon by a sufficient number of items, i.e., its type frequency is low (as was the case with the z-stems), and if the phonetic distance between the alternating segments is greater than for other alternation pairs (as we concluded to be the case for the z-stems and the s-stems, as opposed to the d-stems and the t-stems, based on the appearance of the intermediate pattern (see pg. 229) for the former pair), then the combination of these two factors - low type frequency and a greater phonetic distance between alternating segments - may lead to the disappearance of the morphophonemic alternation from the one member of the pair, i.e., to the weakening of the phonological connections between its items (as was the case for the z-stems for those speakers for whom the "dental palatalization" pattern was not productive).

Our data permitted us to discern one further determinant of the item-to-item variability among the speakers, namely, the familiarity of the speaker with any given lexical item (word recognition). We referred to this as the factor of familiarity, and hypothesized that it was the result of the token frequency of any given item. The role of this factor was noted particularly among semantically coherent word groups, such as the toponyms among the dental-stem items, or the nouns marked [+member of ethnic group] among the velar-stems. Whereas the morphophonemic alternations appeared consistently within these semantic word groups with items which we hypothesized to be more frequent and, thus, more familiar to the speakers (*novi sad, beograd; verbas; rusnak, slovak, pol'ak*), this was not the case with items hypothesized to be less frequent and, thus, less familiar (*madrid; teksas; turok*). The tendency in the latter instances was to avoid the alternation.

In stressing the importance of token frequency in enhancing the familiarity of the speaker with any given lexical item, we recognize at once that frequency must itself be the result of other factors which contribute to the likelihood of the use of the item. The item's meaning, possibly even in some broad socio-cultural sense, no doubt influences this process significantly. Thus, the observed item-to-item variability must be the result of a delicate interplay between meaning and frequency.

Restating briefly, our data on the two morphophonemic alternation patterns in Rusyn suggests that morphophonemic variability emerges from different norms which speakers construct, and which result from different semantic and phonological connections they form within the lexicon. The existence of a pattern may be assured by even a small number of words, which all (or at least most) speakers endow with the pattern. Fluctuations around these words, stemming from different semantic and phonological connections and resulting in different norms, are constrained by the requirement of mutual intelligibility of the norms. The factor of phonetic distance between alternating segments, which may be affected by the number of items participating in the alternations (type frequency), and the factor of familiarity of the speaker with any given lexical item, resulting from the interplay between the item's meaning and its (token) frequency, contribute to the appearance of differences in semantic and phonological connections within the lexicon of individual language users.

Productivity

The inclusion into our data set of non-words enabled us to probe the productivity of the two morphophonemic alternation patterns. As we were to discover, however, the non-words shed light not only on the productivity of the patterns, but also provided new insights into the organizational structure of the lexicon of individual speakers.

The variability encountered in our data was not limited only to the real words but extended to the non-words, as well. We were able to draw parallels in the treatment of both the real words and the non-words by speakers, and indeed relate the treatment of the non-words to the norms established for the real words. Still the parallels were not exact even if drawn a posteriori, and it became clear that predictions as to speaker behavior vis-à-vis the non-words could not be made with full accuracy on the basis of the real words.

Thus, whereas all speakers used both morphophonemic alternation patterns with the real words at least sometimes, it was not the case that the patterns were productive for all speakers, i.e., they were not necessarily applied to the non-words by all subjects. Instead we were confronted with a speech community where one and the same morphophonemic pattern could be both productive for some speakers, and completely unproductive for others. With respect to the "velar palatalization" pattern it was not necessarily the case that abundant use of the pattern fully guaranteed the pattern's productivity for any one speaker - recall the inclusion of Group II members not only into Group A, but also into Groups B and C, as well as the total unproductiveness of the pattern for Group C speakers who hailed from all three real-word groups. (To be sure, the situation was more predictable for the "dental palatalization" pattern where the conditioning environment was simpler.) Furthermore, even among speakers who used the "velar palatalization" pattern productively, substantive differences in the application of the pattern to the non-words were evident. Although, as mentioned, the variable treatment of the non-words was relatable in a general way to the norms established for the real words, we were at once forced to adopt a more differentiated view of the lexical organization of the speakers conceding the existence of nuances in the norms proposed.

In attempting to uncover the possible determinants of productivity, we noted a difference in importance carried by individual words (tokens), on the one hand, and, on the other hand, the number of the words (type frequency) within the semantically conditioned "velar palatalization" pattern, as opposed to the primarily phonologically conditioned "dental palatalization" pattern. This latter pattern was used productively only by those speakers who applied it to a large number of real words. An abundant use of the "velar palatalization" pattern with the real words, without regard to their meaning (e.g. some speakers in adult Group II and non-adult Group 3), also enhanced the chances of the speaker's productive use of this pattern, likewise without regard to the meaning of the non-words (some speakers of Group A). For the "velar palatalization" pattern these speakers were, however, in the minority.

The majority of speakers in our sample confined the "velar palatalization" pattern to a smaller number of items, heeding the items' meaning. For most of them (Groups A and B) the pattern was also productive, albeit with substantive differences between the two groups. Interestingly enough, the application of the pattern to the non-words for these speakers was guided by the same semantic considerations observed as valid for the real words. Thus, the same semantic hierarchy, established for the real words, was reflected among the non-words: words marked [+ member of ethnic group] had the highest probability of appearing with "velar palatalization," followed by words bearing the feature [+human] . In third place were items marked [+animate, -human] , while those referring to inanimate objects were least likely to appear with this pattern. We noted that these parallels were drawn by speakers irrespective of the size of a given semantic class, and were, therefore, led to conclude that it is the meaning itself, borne by these words, which is the crucial force in establishing the pattern's productivity.

Setting the two patterns side by side, we are able to state that for the "dental palatalization" pattern productivity was secured only in those cases where the pattern was applied to a large enough number of real words of all the dental-stem noun groupings, i.e., if the type frequency was adequate and representative of the entire alternation set. For the "velar palatalization" pattern high type frequency of the real words was important in establishing the pattern's productivity only for those speakers who made no reference to the semantic conditioning of the pattern. For those speakers who were sensitive to the semantic environment, however, individual word tokens, as bearers of semantic features viewed as characteristic of the pattern, assumed the role of securing the productivity of the pattern. Thus, whereas the primarily phonologically conditioned pattern required a large set of phonological connections among items for its productivity, manifested in high type frequency, the semantically conditioned pattern relied on meaning, borne by individual word tokens, to achieve this. In the latter case, the semantic connections between words, which did not have to be numerous, were of great importance.

Having established this, however, we are still left with the dilemma of why speakers with seemingly similar treatment of the real words for any one morphophonemic pattern can differ vastly in their treatment of the non-words, i.e., why for some the pattern may be productive, while for others unproductive. This was particularly evident for the "velar palatalization" pattern, where speakers from the same subject groups for real words were distributed among different non-word groups (Table 6.20). We propose that similarities in the treatment of the real words are, in fact, similarities which exist only on the surface, and that differences in pattern productivity reflect differences in the lexical organization of individual speakers. The suggested variation in the lexical organization is due, in our opinion, to differences in the strength and extensiveness of the network of phonological and semantic connections between items which individual speakers must make. (Our view of the existence of "networks" within the lexicon emerges from Bybee's model of morphology (1985, 1988), where items sharing similar semantic and/or phonological features are linked with each other by sets of connections (1988:126 ff.; refer also to our discussion in Chapter Three and in the latter part of this chapter). These "sets of connections," or "networks" in our terminology, assume varying strengths, depending both on the number of features shared between items, and on the (token) frequency of any particular item (ibid.; 1985:123 ff.). Thus, lexical networks are created by the two mechanisms available in Bybee's model - "lexical connections" and "lexical strength." However, we propose that the strength and extensiveness of these networks is subject to individual variation.)

Where for one speaker the more strongly and extensively developed connections between items of a particular word class are those pertaining to the semantic similarity of the items, for another speaker the network of semantic connections may be less strong and less extensive, and a network based on phonological similarity of the items may be prevalent. For both speakers the relevant semantic and/or phonological connections between the items may be strong enough when a decision need to be made regarding the application of a morphophonemic pattern. Hence, the seeming consensus in speech output. The differences between the speakers would become apparent when new items were introduced to the word class in question, and a decision about their integration via the morphophonemic pattern was required. At this point the productivity of the pattern would be challenged, and the heretofore hidden differences in the lexical organization of the speakers would be revealed.

Change

The "velar" and the "dental" palatalization patterns have deep historical roots in Rusyn, and share numerous similarities with equivalent patterns in related and neighboring Slavic languages. In their evolution into their present form they have undoubtedly undergone various wrenching changes, and the path ahead probably contains many more surprises. We had speculated on the reasons why these two patterns may be especially well-suited targets for possible restructurings earlier in this work (Chapter Four). Our field work and the analysis of our data have convinced us that some restructuring is indeed occurring at the present time, and that the variability and heterogeneity encountered are reflective of this.

Our data provide us with three indicators of a change in progress. The first of these are the differences we encountered in the productivity levels of both morphophonemic patterns which signal differences in the viability of these patterns among different speaker groups. The frequent simultaneous occurrence, in the case of both patterns, of two variants (palatalized and unpalatalized) of one lexical item, which was particularly evident among certain speaker groups, is also indicative of an ongoing change in the linguistic structure. And, finally, the observation that the linguistic variability in the data is not completely arbitrary, but may be associated, if only weakly, with the distribution of speakers within the social matrix lends further support to the claim of a linguistic change in progress.

We have argued in the previous section that the differences in the productivity levels of the two patterns reflect differences in the lexical organization of individual speakers, stemming from differences in phonological and semantic networks which speakers construct in their lexicon. As these differences in the productivity levels of various speakers were indeed striking (compare Groups A and B with Group C for the "velar palatalization" pattern, and Groups I and II with Group III for the "dental palatalization" pattern), we can assume that the differences in the lexical networks formed by them are also profound. Different lexical networks, possibly signalling divergent orientations in the ongoing process of network construction by individual language users, provide the basis for change within the linguistic structure.

The simultaneous use of two variants for a single lexical item by groups of speakers must also be indicative of a restructuring occurring within the lexical networks, where new connections are made, or old ones severed, accompanied by initial uncertainty and wavering between two possibilities. The probing of the two possibilities by individual speakers must undoubtedly be somewhat of a risky process within the context of the speech community, as not only is mutual interpretability tested, but, perhaps even more importantly, so is mutual acceptability. Thus, the restructuring must initially occur on an item-to-item basis, its ultimate tempo dictated, at least in part, by the success or failure of the interaction between the speakers who are initiating the change, on the one hand, and, on the other hand, the hearers who either accept and possibly adopt the change, or reject it and thereby stop its further spread. In the case of the "velar palatalization" pattern we observed the frequent use of both variants for a single lexical item foremost by Group I speakers. Although with regard to the "dental palatalization" pattern there was less overall fluctuation, the use of both variants was generally more frequent among Group III subjects, followed by speakers of Group II.

Group I speakers for the "velar palatalization" pattern and Group III speakers for "dental palatalization," exhibiting a general similarity with respect to the use of double variants for the two patterns, also shared certain similaritites in terms of the four social variables used in our study, i.e., gender, residence, age, and education: more of them were males, more were under the age of forty, more had higher education, and, in the case of Group III for "dental palatalization," more were city residents. In its use of "dental palatalization" Group III showed a striking and consistent difference from the rest of the speech community, while in the case of the "velar palatalization" pattern Group I differed from the majority of the informants (Group II), but shared some similarities with a smaller group of speakers comprised predominantly of village residents and older subjects (Group III).

Recalling briefly the general linguistic tendencies observed for the two patterns, in the case of "velar palatalization" the majority of the speakers (Group II) exhibited a two-way division of the semantic space, applying the alternation to items referring to human beings, but not to those denoting animals or inanimate objects. A small number of speakers of this group, most of them city residents, extended "velar palatalization" to several items in the latter semantic domain, thereby ignoring the semantic features of the items and focusing instead on their phonological similarity. This tendency became more apparent among the non-adult subjects who were city residents. The village youths, on the other hand, showed more sensitivity to the semantic composition of the items.

The adult Group I speakers, joined by subjects of Group III, showed a tendency to limit the semantic context for the "velar palatalization" pattern even further than the rest of the informants, delineating a domain within a domain with individually defined contours. The restrained behavior of Group I and III informants became all the more obvious when the productivity of the pattern was tested - for most speakers the pattern was either unproductive or confined to items marked [+member of ethnic group] . The more "restrictive" behavior of Group I subjects in contrast to the more "expansive" orientation of Group II speakers, which found strong support among the city youths, led us to conclude that there exist two opposing tendencies within the speech community with regard to the "velar palatalization" pattern.

In its treatment of the "dental palatalization" pattern the adult group represented by more males, more city residents, more speakers under the age of forty, and those with higher education (Group III), as mentioned, consistently differed from the rest of the adult population. Moreover, non-adult Group 3, comprised predominantly of the oldest youths from the village, showed a strong similarity to adult Group III. For both groups "dental palatalization" appeared with a large number of items of all six dental-stems, and for both groups the pattern was productive. This was in sharp contrast to the rest of the speech community, where "dental palatalization" was confined to a limited number of items and was unproductive.

In their use of the "dental palatalization" pattern Group III speakers were much more consistent than Group I speakers were in the use of "velar palatalization." Where, for example, for the latter pattern we noted a high occurrence of two variants for a single lexical item, this type of fluctuation was greatly reduced for the former pattern. Thus, from the perspective of the linguistic system, the domain of application of "dental palatalization" was more clearly defined by the speakers, resulting in an unambiguous signal to the hearers, than was the case with "velar palatalization." Moreover, from the perspective of the social structure, Group III for "dental palatalization" was more distinct in terms of its social make-up than was Group I for "velar palatalization." We interpret these differences as indicating different stages in the advancement of the linguistic restructuring promoted by Group III in the case of the "dental palatalization" pattern, and by Group I vis-à-vis the "velar palatalization" pattern. Whereas we see the change in the "velar palatalization" pattern as only in an initial stage, the change in the "dental palatalization" pattern can be seen as more advanced, where the spread of a linguistic change results in the strengthening of the relevant connections within the lexical networks of language users, and the sharpening of the social profile of the promoters of the change.

From the perspective of the present, we venture to predict that the change initiated within the "dental palatalization" pattern has a higher probability of survival than the change promoted within the "velar palatalization" pattern. In our opinion, at least two factors seem to favor the change within the former pattern. The first of these pertains to the clarity of the conditioning environment of the alternation. In the case of the "dental palatalization" pattern the conditioning environment is primarily phonological and transparent, while in the case of the "velar palatalization" pattern it is more complex and less transparent, shaped both by phonological and by semantic features. The second factor favoring the change within the "dental palatalization" pattern pertains to the clarity of the phonetic/acoustic signal associated with the use of this pattern: the alternation of the stem-final consonant provides the hearer with an overt signal, which may facilitate transfer and spread of the change. On the other hand, the change promoted (by Group I) in the case of the "velar palatalization" pattern restricts the alternation, and favors instead the non-alternation of the stem-final consonant. Such a change does not provide any noticeable acoustic reinforcement for the hearer, making it less conspicuous and, therefore, possibly inhibiting transfer. Indeed we have seen that "dental palatalization," as used by adult Group III, has already been adopted by non-adult Group 3, an indication that the change is spreading within the speech community, and that its chances of survival have been enhanced.

And, finally, we may attempt to speculate on the role of the initiators of both morphophonemic changes within the speech community, and thereby also broach the topic of the possible reasons and causes for the appearance of these changes in Rusyn at this point in time. The unusual grouping of younger speakers, predominantly, but not exclusively, males, residents of the city, and those with higher education, as the promoters of the changes, can be explained when one recalls that the main center of higher education for future Rusyn language and literature teachers is the Chair for Rusyn Language and Literature at the University of Novi Sad. Some of our younger adult informants were drawn from this Deparment, and some did indeed join the group of the promoters of the changes. The Department of Rusyn enjoys a great deal of respect within the Rusyn community, and, of course, its influence in the preservation of the Rusyn language cannot be underestimated.

A second center of learning in the Rusyn community is located in the village of Ruski Kerestur, where we find an elementary and a secondary school. It was from here that we drew the village speakers for our non-adult sample. The oldest of these generally appeared in Group 3 whose members readily took up the example of adult Group III in furthering the use of the "dental palatalization" pattern. For the Rusyn youths who live in Novi Sad no equivalent schooling in the Rusyn language is available, and Serbo-Croatian is the main language of instruction for them.

The "velar palatalization" pattern and the "dental palatalization" pattern may be well-suited targets for restructuring not only from the perspective of the linguistic system, where tensions may be heightened due to the unclarity of the conditioning environment of both alternations for some speakers. In this context both patterns in Rusyn might come under the influence of parallel patterns in Serbo-Croatian (on the comparison of the Rusyn patterns with equivalent SC patterns see Chapter Four). We propose that this indeed seems to be the case for some speakers in our sample who are most exposed to SC, namely, the city youths - recall their extension of the "velar palatalization" pattern to items purely on the basis of their phonological similarity (as is the case in SC).

The changes promoted by our highly educated city adults with regard to "velar palatalization" and "dental palatalization," however, have the effect of highlighting the linguistic differences between Rusyn and SC, and not diminishing them. We propose that this is exactly the effect desired by this speaker group which, in its concern for the preservation of the Rusyn language and culture, confronted with the pressures of linguistic and cultural assimilation to SC, is attempting to emphasize the unique character of Rusyn vis-à-vis its much larger neighbor. In this process, "velar" and "dental" palatalization serve as possible means of differentiating the two languages. We conclude, therefore, that the causes for the actuation of the changes, as promoted by this speaker group, are to be sought not only within the linguistic system proper, but also in the socio-cultural context, in which the Rusyn language has been elevated to perform an emblematic function.

Some implications for the theoretical framework

Bybee's analogy-based model of morphology

Our study of the "velar" and the "dental" palatalization patterns in Rusyn lends strong support to arguments in favor of an analogical approach to language versus a rule-based approach. The linguistic behavior of speakers, observable in our data, too highly variable to be satisfactorily described and explained by rules, can readily be interpreted within an analogy-based model capable of representing differences in individual lexical networks which lead to the appearance of numerous norms within the speech community. The analogy-based model of morphology developed by Joan Bybee (1985, 1988) is well-suited for this task, having the requisite mechanisms to capture the processes underlying morphophonemic variability, productivity, and change.

According to Bybee, morphophonemic alternations highlight two aspects of the organization of forms within paradigms: the "basic-derived" relationship, and the "degree of relatedness" of the forms. The "basic-derived" relationship is determined by morphological categories (e.g., tense, number, person), and by the "degree of autonomy" of particular lexical items. The "degree of relatedness" of items is influenced by the number of shared phonological and semantic features.

In Bybee's model, two mechanisms are utilized in the process of storing items within the lexicon: "lexical connections" and "lexical strength." The first mechanism refers to the ability to form links among lexical items, while the second accounts for the ability to register the frequency of individual items and patterns. During lexical storage entire words or parts of words are matched and mapped onto each other based on semantic and/or phonological similarity, which results in the strengthening of representations and/or lexical connections between items. Words which are used frequently acquire stronger representations, i.e., attain a higher degree of "lexical strength," and also become more "autonomous," requiring fewer "lexical connections" to other items. Thus, the notions "lexical strength" and "lexical connections" are dynamic, allowing both for the strengthening and for the weakening of lexical networks constructed by language users. (A fuller account of Bybee's model is provided in Chapter Three.)

Although our study dealt with words related not paradigmatically, but rather cross-paradigmatically, the results of our analysis suggest that the organizational parameters described by Bybee with regard to paradigms may also be applicable, in a general way, to cross-paradigmatic lexical groupings, specifically to morphophonemic word classes. Members of these word classes also show internal relationships which parallel the organizational principles "basic-derived" and "degree of relatedness" utilized in paradigms.

We observed, particularly in the case of the "velar palatalization" pattern, the important role of individual words (e.g. *rusnak* "Rusyn"), both in the maintenance of the pattern (recall the unanimous agreement among speakers with regard to palatalizing this item), and in assuring its productivity (semantically similar non-words had the highest probability of being palatalized). In the case of the "dental palatalization" pattern certain words were also targeted for palatalization by most speakers, and fluctuations in patterning did not affect these "core" items. There was little doubt, therefore, that for both patterns, and, thus, within both morphophonemic word classes, certain words achieved a greater prominence than others, indicating that some relationship between the items in each word class indeed exists. It may be the case that such a relationship is influenced by prototype effects, i.e., by the cognitive process of categorization which assigns special status to some members of a category as being the "best example" or the most "prototypical" member of the category. Prototype effects have been noted to occur at all levels of language (Lakoff 1987:58 ff.), including the lexicon. Thus, their influence in the organization of morphophonemic word classes may not at all be anomalous.

Clearly, members of morphophonemic word classes are brought together on the basis of phonological similarities. Since, as our study shows, semantic factors can play a role in the application of morphophonemic patterns, semantic similarities may at times also be an important organizational factor in the formation of morphophonemic word classes. The measure "degree of relatedness," applicable within paradigms, is, therefore, equally relevant in establishing cross-paradigmatic relationships.

Further evidence for the importance of this measure for morphophonemic word classes comes from the observation of the differences in relative strength of semantic connections, as opposed to phonological ones. Our analysis of the productivity of the two morphophonemic alternation patterns in Rusyn revealed that where only a few semantic connections sufficed to secure the productivity of the semantically-conditioned "velar palatalization" pattern, a large set of phonological connections was needed to achieve this for the "dental palatalization" pattern. This observation accords with the conclusion reached by Bybee (1985:118) regarding the greater importance of semantic versus phonological connections between words in a paradigm, and complies with the findings of Derwing and Baker (1977, 1979) that semantic features carry more weight than phonetic features in speaker judgments about the relatedness between pairs of morphemes. We may, thus, conclude that the measure "degree of relatedness" serves as an organizational principle both within and across paradigms.[1]

Our final point with regard to Bybee's analogy-based model of morphology emerges from the observation made above about the differences in relative strength of semantic versus phonological connections, but relates this observation to the question of productivity. According to Bybee (132 ff.), the only factor in securing the productivity of morphophonemic patterns is their type frequency. In her view, individual highly frequent tokens do not exert an influence in this process, since, having a high degree of "lexical strength" and, thus, being "autonomous," they also have fewer "lexical connections" to other items and, therefore, fewer possibilities to transmit their pattern.

Our study of the two morphophonemic alternations in Rusyn demonstrates that where phonological connections in a pattern are primary, as was the case with "dental palatalization," then type frequency indeed plays an important role in establishing the pattern's productivity. However, where semantic connections are relevant in the appearance of a pattern, as with "velar palatalization," then individual words, as bearers of semantic features viewed as characteristic of the pattern, may take on the role of securing the pattern's productivity. Thus, both type and token frequency are relevant for pattern productivity, although under different conditions.

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[1] Bybee's arguments in support of the measure "degree of relatedness" for paradigm-internal organization have to do primarily with its role in morphophonemic changes aimed at eliminating differences among closely related forms (refer to our discussion in Chapter Three, pg. 52). Some casual observations we made while collecting data for our study indicate that the "degree of relatedness" between forms may also play a role not only in the elimination, but also in the introduction of alternations within paradigms. While eliciting data for the "velar palatalization" pattern, we found that numerous speakers applied the pattern in the oblique cases of the masculine plural, in contexts where the pattern was phonologically not warranted. Thus, speakers produced such forms as ***bujacox, xrobacox, slovacox***, for the Gen.Pl., or forms like ***rusnacami, slovacami, vojacami***, etc. for the Instr.Pl., rather than the expected ***bujakox, xrobakox, slovakox; rusnakami, slovakami, vojakami***. (Kočiš in his Pravopis (1980:46) also notes that in the spoken language the noun ***rusnak*** retains the stem-final *-c* of the Nom.Pl. in all the oblique plural cases. He advises against using such forms in the written language, however.) Although any definitive conclusions are impossible on the basis of just these casual observations, we might venture to speculate that the nominative plural, as the basic and possibly the most autonomous form in the plural paradigm, serves as the source for the introduction of the morphophonemic alternation into the oblique plural cases. Hence, the measure "degree of relatedness" becomes activated. This type of restructuring might, of course, receive support from other sources, as well, e.g., from the seemingly highly autonomous and possibly basic form in a cross-paradigmatic lexical set ***rusnak*** (see our discussion on pg. 249 ff.) which, judging by the above-mentioned comments by Kočiš, may have already generalized in the palatalized form throughout the plural paradigm. Further support for this type of restructuring might come also from "parallel phenomena" which exist in SC. Although we cannot speculate on the causes of this restructuring any further, the existence of this process strengthens our conviction, expressed earlier, that the change initiated within the "velar palatalization" pattern, restricting the pattern's domain of application, does not have a very high probability of survival.

In an analogy-based model of morphology the interrelationships between phonological connections and type frequency, on the one hand, and between semantic connections and token frequency, on the other hand, can easily be represented in terms of the two mechanisms of lexical storage - "lexical strength" and "lexical connections." But one must allow for the possibility that the semantic connections of individual tokens, even of "autonomous" ones, can act as channels for the transmission of their pattern. This may be further evidence for the differences in relative strength between semantic and phonological connections within lexical networks.

Labov's sociolinguistic approach to the study of language change

Our understanding of the properties of change within the two morphophonemic alternation patterns in Rusyn would have been undoubtedly greatly impoverished if no notice had been taken of the social structure of the speech community, or of the extra-linguistic situation in which the Rusyn language functions, namely, that of a language contact area. In our study of morphophonemic variability, productivity, and change we adopted, therefore, the sociolinguistic approach of William Labov whose model of language change takes account of both the linguistic structure and the social context in its quest to understand the mechanisms of linguistic evolution.

Within the Labovian model (1972d, 1972e) an adequate study of linguistic change must deal with at least five problems, namely, the problem of the *transition* of the change between any two stages, the problem of the *embedding* of the change within the linguistic and the social structures, the problem of the *evaluation* of the change by members of the speech community, the problem of *constraints* on the conditions for the change, and the problem of the *actuation* of the change at a particular place and time. Not all of these problems, as Labov points out (1972e:283), are related to the social context of the change. According to Labov, whereas the *transition* and the *constraints* problem relate solely to linguistic structure, the *embedding* problem deals both with the linguistic and with the social structure. The *evaluation* problem, in turn, pertains only to the social context of the change. With respect to the *actuation* problem, Labov predicts that here too social factors are deeply involved.

In the course of our study of the "velar" and the "dental" palatalization patterns in Rusyn we touched upon, to a greater or lesser extent, four of the above mentioned five problems. Of foremost concern to us were problems pertaining to the *transition* and the *embedding* of variability and change. Our data also permitted us to make several observations with regard to the problems of *constraints* on change and the *actuation* of change. Investigating the *evaluation* problem remained, however, outside the scope of our present possibilities, and must be retained as a goal for future research. Since in the previous sections we discussed our results from the perspective of the linguistic structure, and thus discussed *transition, constraints* and partially also *embedding,* we confine our comments in this section to those pertaining to the social structure, viz., *embedding* and *actuation.*

Resolving the *embedding* problem requires gaining an understanding of the social context within which a linguistic change occurs, i.e., constructing an appropriate social matrix of the speech community. Labov (1982:76) enumerates "five dimensions of social structure" which have been found relevant for this task, namely, "social class or status, race or ethnicity, age, gender, and locality" of the speakers. Not all of these five "dimensions of social structure" are generalizable across cultures, and, therefore, the appropriate variables must be found for any given linguistic community.

The social matrix for our study included three of the social variables proposed by Labov - age, gender, and locality. Since our observations led us to believe that the socio-economic variable did not serve as an important differentiating factor in the Rusyn community, at least at the present time, this variable was not used in choosing our informants. The variable "race or ethnicity" also did not play a role in our study. We did take note, however, of the educational level of the informants, since several of our initial contacts with members of the Rusyn community led us to believe that this variable may, to some extent, influence a speaker's linguistic behavior. (A fuller account of the population sample chosen for our study is provided in Chapter Five.)

Although adhering to the Labovian model with regard to the construction of the social matrix, as the context within which language activity must be observed, we departed from the Labovian procedure in the methodology adopted for analysis of the linguistic data. The practice established within the Labovian model of sorting speakers into groups on the basis of the social variables used in choosing them, and only then comparing their linguistic behavior, did not bring any clarity into our data on the treatment by speakers of the two morphophonemic alternation patterns in Rusyn. The analytical technique we finally adopted for the analysis of our data, the "response coincidence analysis" (Baker and Derwing 1982), grouped the speakers on the basis of similarities in their linguistic behavior with no regard to the social variables used in choosing them. This guaranteed an initial neutral stance vis-à-vis the social structure, and the relative importance of the social variables for the embedding of linguistic activity emerged, so to speak, naturally through the description of speakers sharing similar linguistic habits. Thus, whereas the procedure adopted by Labov takes as its basis the social group, the "response coincidence analysis" takes as its basis for analysis the linguistic group.

In comparing the "social group" approach with the "linguistic group" approach, Horvath (1985:63) concludes that, given an adequate linguistic and social description of the data, both approaches should converge on a similar description of the variation. Our study of morphophonemic variability in Rusyn provides evidence that it may not always be possible to arrive at an adequate social description of the data prior to the linguistic analysis. In situations where the socio-cultural and the socio-economic context of the speech community are not well understood, the social variables relevant for the construction of the social matrix may not be readily apparent. Since Labov's "five dimensions of social structure" are not fully generalizable across cultures, as became evident in the Rusyn case, adopting the "linguistic group" approach is the only alternative in such a situation. Moreover, "in the earliest and latest stages of a change, there may be very little correlation with social factors," as pointed out by Weinreich, Labov, and Herzog (1968:185). Here again the "linguistic group" approach must be seen as preferable to the "social group" approach. Earlier, as may be recalled, we presented independent arguments for believing that the restructuring occurring within the two morphophonemic patterns in Rusyn, particularly within "velar palatalization," is indeed at an early stage of implementation. This no doubt explains the failure of the "social group" approach in the analysis of our data.

And, finally, a remark on the problem of *actuation* in relation to the observed changes occurring within the two morphophonemic alternation patterns in Rusyn. Labov's numerous sociolinguistic studies (e.g. 1972d, 1980, 1982) have enabled him to provide a general portrait of the initiators of a linguistic change. They form, he says, a "restricted subgroup of the speech community." They are "usually people with the highest local status, who play a central role in community affairs," and who, while having a large number of contacts within the neighborhood, also have "the highest proportion of their acquaintances outside the neighborhood." A sound change is activated "when the separate identity" of the mentioned subgroup has been "weakened by internal or external pressures." The linguistic form which begins to shift is often "a marker of regional status with an irregular distribution within the community." (A fuller discussion of this aspect of Labov's model is contained in Chapter Three.)

The portrait of the initiators of the morphophonemic changes in Rusyn, which emerged from our investigation, draws striking parallels with the portrait outlined by Labov. But the interpretation of the causes of the changes in Rusyn can be complete, we feel, only if the specific situation of this language and its community of speakers is taken into account, i.e., if Rusyn is placed within a broader socio-political context in which it functions as a minority language in an area of dynamic language contact, particularly, with the national language (SC). Within such a context the "weakening," mentioned by Labov, might affect not only a subgroup of a linguistic community, but indeed an entire linguistic community, and the linguistic form which begins to shift might not only be a "marker of regional status," but a marker of the unique status of the entire language. The initiators of the changes in Rusyn - highly educated city adults - may be struggling to maintain the identity of their linguistic community.

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APPENDIX A: DISTRIBUTION OF ADULT SUBJECTS WITHIN THE SOCIAL STRUCTURE

Table A.1: DISTRIBUTION BY RESIDENCE AND GENDER

(n = 64)

	Ruski Kerestur	Novi Sad	
Females	17 (26.5%)	15 (23.5%)	32 (50%)
Males	17 (26.5%)	15 (23.5%)	32 (50%)
	34 (53%)	30 (47%)	

Table A.2: DISTRIBUTION BY AGE

(n = 64)

Age	Number of subjects	Percent
20 - 29	18	28.125%
30 - 39	12	18.75%
40 - 49	10	15.625%
50 - 59	8	12.5%
60 - 69	8	12.5%
70 & older	8	12.5%

Table A.3: DISTRIBUTION BY RESIDENCE, AGE, AND EDUCATION

(n = 64)

	Ruski Kerestur (n = 34)			Novi Sad (n = 30)		
Age	elem.	second.	higher	elem.	second.	higher
20-29	-	3	5	-	1	9
30-39	4	2	2	1	1	2
40-49	4	1	1	1	1	2
50-59	3	1	-	-	1	3
60-69	1	1	2	1	3	-
70 & older	3	1	-	2	-	2
Total	15	9	10	5	7	18
Percent (n=64)	23%	14%	16%	8%	11%	28%

Table A.4: DISTRIBUTION BY GENDER, AGE, AND EDUCATION

(n = 64)

	Females (n = 32)			Males (n = 32)		
Age	elem.	second.	higher	elem.	second.	higher
20-29	-	2	7	-	2	7
30-39	4	1	1	1	2	3
40-49	4	1	-	1	1	3
50-59	2	-	2	1	2	1
60-69	2	1	1	-	3	1
70 & older	4	-	-	1	1	2
Total	16	5	11	4	11	17
Percent (n=64)	25%	8%	17%	6%	17%	27%

Table A.5: DISTRIBUTION BY GENDER, RESIDENCE, AGE, AND EDUCATION

(n = 64)

	Females (n = 32)						Males (n = 32)					
	RK (n=17)			NS (n=15)			RK (n=17)			NS (n=15)		
Age	el.	sec.	high	el.	sec.	high	el.	sec.	high	el.	sec.	high
20-29	-	1	3	-	1	4	-	2	2	-	-	5
30-39	3	1	-	1	-	1	1	1	2	-	1	1
40-49	3	-	-	1	1	-	1	1	1	-	-	2
50-59	2	-	-	-	-	2	1	1	-	-	1	1
60-69	1	-	1	1	1	-	-	1	1	-	2	-
70 +	2	-	-	2	-	-	1	1	-	-	-	2
Total	11	2	4	5	3	7	4	7	6	0	4	11
Percent (n=64)	17%	3%	6%	8%	5%	11%	6%	11%	9%	0	6%	17%

APPENDIX B: k-STEM MASCULINE NOUNS

Table B.1: k-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Ani-mate	Human	Ethnic group	English	Serbo-Croatian
pol'ak	+	+	+	+	Pole	Poljak
rusnak	+	+	+	+	Rusyn	Rusin
slovak	+	+	+	+	Slovak	Slovak
turok	+	+	+	+	Turk	Turčin, *nom.pl.* = Turci
bratn'ak	+	+	+	-	cousin	bratić, bratučed
vlasn'ik	+	+	+	-	owner	vlasnik
vojak	+	+	+	-	soldier	vojnik
žobrak	+	+	+	-	beggar	prosjak
zradn'ik	+	+	+	-	traitor	izdajnik
kozak	+	+	+	-	cossack	kozak
parn'ak	+	+	+	-	person of same age	vršnjak (parnjak = 'member of a pair')
robotn'ik	+	+	+	-	worker	radnik
unuk	+	+	+	-	grandson	unuk
učen'ik	+	+	+	-	pupil	učenik
čudak	+	+	+	-	eccentric person	čudak
junak	+	+	+	-	brave man	junak
pijak	+	+	+	-	drunkard	pijanac, pijanica (pijaci = 'markets')
bracik	+	+	+	-	brother *dimin.*	bratac, bratić
hrišn'ik	+	+	+	-	sinner	grešnik
dzijak	+	+	+	-	cantor	pojac
morjak	+	+	+	-	sailor	mornar
bujak	+	+	-	-	bull	bik
vovk	+	+	-	-	wolf	vuk, *nom.pl.* = vuci & vukovi
šl'imak	+	+	-	-	snail	puž
špak	+	+	-	-	starling	čvorak
rak	+	+	-	-	crab	rak

Item	Real word	Ani-mate	Human	Ethnic group	English	Serbo-Croatian
xrobak	+	+	-	-	worm	crv , glista
kon'ik	+	+	-	-	horse *dimin.*	konjic
pn'ak	+	-	-	-	stump	panj
l'ik	+	-	-	-	remedy	lek
ručn'ik	+	-	-	-	towel	ručnik
slovn'ik	+	-	-	-	dictionary	rečnik
stol'ik	+	-	-	-	table *dimin.*	stolić
kurn'ik	+	-	-	-	chicken coop	kokošinjac

požak	-	+	+	+	inhabitant of 'Pož' river valley in China
hunak	-	+	+	+	inhabitant of city of 'Hun' in China
forok	-	+	+	-	small boy in African tribe
ažik	-	+	+	-	small boy, helper of Arab sheikh
tundak	-	+	+	-	fruit vendor in Arab lands
kožak	-	+	-	-	bird, native to Mexico
gl'inak	-	+	-	-	small mud animal, native to China
kempik	-	-	-	-	small camping vehicle
saturn'ik	-	-	-	-	rocket circling Saturn

Items in column 1 are given in phonemic transcription, with the phonemic slashes (/ /) omitted.

Words in **bold** type appeared also on the short questionnaire.

APPENDIX C: DENTAL-STEM MASCULINE NOUNS

Table C.1: d-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Toponym	English	Serbo-Croatian
had	+	-	snake	zmija (had = 'hell')
hvozd	+	-	nail	ekser (gvozd='wedge' gvožđe='iron')
šl'id	+	-	footprint	otisak stopala
bagdad	+	+	Baghdad	Bagdad
beograd	+	+	Belgrade	Beograd
madrid	+	+	Madrid	Madrid
novi sad	+	+	Novi Sad	Novi Sad
šid	+	+	Sid (town in Srem)	Šid
narod	+	-	people, nation	narod
l'ad	+	-	ice	led
rod	+	-	family, lineage	rod
zavod	+	-	institute, office	zavod

Item	Real word	Toponym	English
bid	-	+	city in early England
karid	-	+	ancient Mediterranean city
šod	-	-	species of fish
čirinod	-	-	type of forest

Items in column 1 are given in phonemic transcription, with the phonemic slashes (/ /) omitted.

Words in **bold** type appeared also on the short questionnaire.

Table C.2: t-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Toponym	English	Serbo-Croatian
most	+	-	bridge	most
plot	+	-	fence	plot
univerzitet	+	-	university	univerzitet
front	+	-	front (military)	front
švet	+	-	world	svet
frankfurt	+	+	Frankfurt	Frankfurt
xvost	+	-	tail	rep
jehipet	+	+	Egypt	Egipat
xribet	+	-	backbone	hrbat
život	+	-	life	život
ararat	+	+	Mt. Ararat	Ararat
everest	+	+	Mt. Everest	Everest
kohut	+	-	rooster	petao
vikot	-	-	flower vase	
rumest	-	+	ancient Roman city	
korit	-	+	ancient Greek city	
sarit	-	-	Arab wagon	

Table C.3: z-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Toponym	English	Serbo-Croatian
kavkaz	+	+	Caucasus	Kavkaz
pariz	+	+	Paris	Pariz
mraz	+	-	frost	mraz
džez	+	-	jazz	džez

birez	-	-	cap, worn by Arab men
sal'iz	-	+	ancient Greek city
l'ikoz	-	-	sacred book in ancient Greece

Table C.4: s-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Toponym	English	Serbo-Croatian
kaktus	+	-	cactus	kaktus
avtobus	+	-	bus	autobus
l'es	+	-	forest	šuma
nos	+	-	nose	nos
verbas	+	+	Vrbas (town near Ruski Kerestur)	Vrbas
mars	+	+	Mars	Mars
cirkus	+	-	circus	cirkus
laos	+	+	Laos	Laos
atos	+	+	Mt. Athos	Atos
teksas	+	+	Texas	Teksas
atlas	+	-	atlas	atlas

dos	-	-	small bag
til'is	-	+	ancient Chinese city
arus	-	+	ancient Roman city
koris	-	-	plant, native to Cyprus

Table C.5: l-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Toponym	English	Serbo-Croatian
april	+	-	April	april
valal	+	-	village	selo
stol	+	-	table	stô, stol
fotbal	+	-	soccer	futbal, fudbal
ural	+	+	Ural mountains	Ural
nepal	+	+	Nepal	Nepal
kabel	+	-	bucket	vedro (kabel = 'cable')
hotel	+	-	hotel	hotel, svratište
mindil	-	-	Arabic cheese	
sul	-	+	river in Nepal	
jafel	-	+	ancient Arab city	
tugal	-	-	tree, native to Africa	

Table C.6: n-STEM REAL AND NON-WORDS
(LONG AND SHORT QUESTIONNAIRES)

Item	Real word	Toponym	English	Serbo-Croatian
baran	+	-	ram	ovan
hajziban	+	-	railway	železnica
komin	+	-	chimney	odžak, dimnjak
ml'in	+	-	mill	mlin
okean	+	-	ocean	okean
berl'in	+	+	Berlin	Berlin
iran	+	+	Iran	Iran
sudan	+	+	Sudan	Sudan
slon	+	-	elephant	slon
magazin	+	-	warehouse	magacin
orman	+	-	wardrobe, commode	orman
london	+	+	London	London
petro-varadin	+	+	Petrovaradin (district of Novi Sad)	Petrovaradin

arun	-	+	ancient Persian city
rašan	-	+	river in India
sturan	-	-	sacred book in India
faston	-	-	automobile motor part

APPENDIX D: THE "VELAR PALATALIZATION" PATTERN:
DENDROGRAMS FOR SUBJECT GROUPS AND OBJECT CLUSTERINGS

Figure 1: ADULT SUBJECT GROUPS FOR k-STEM REAL WORDS

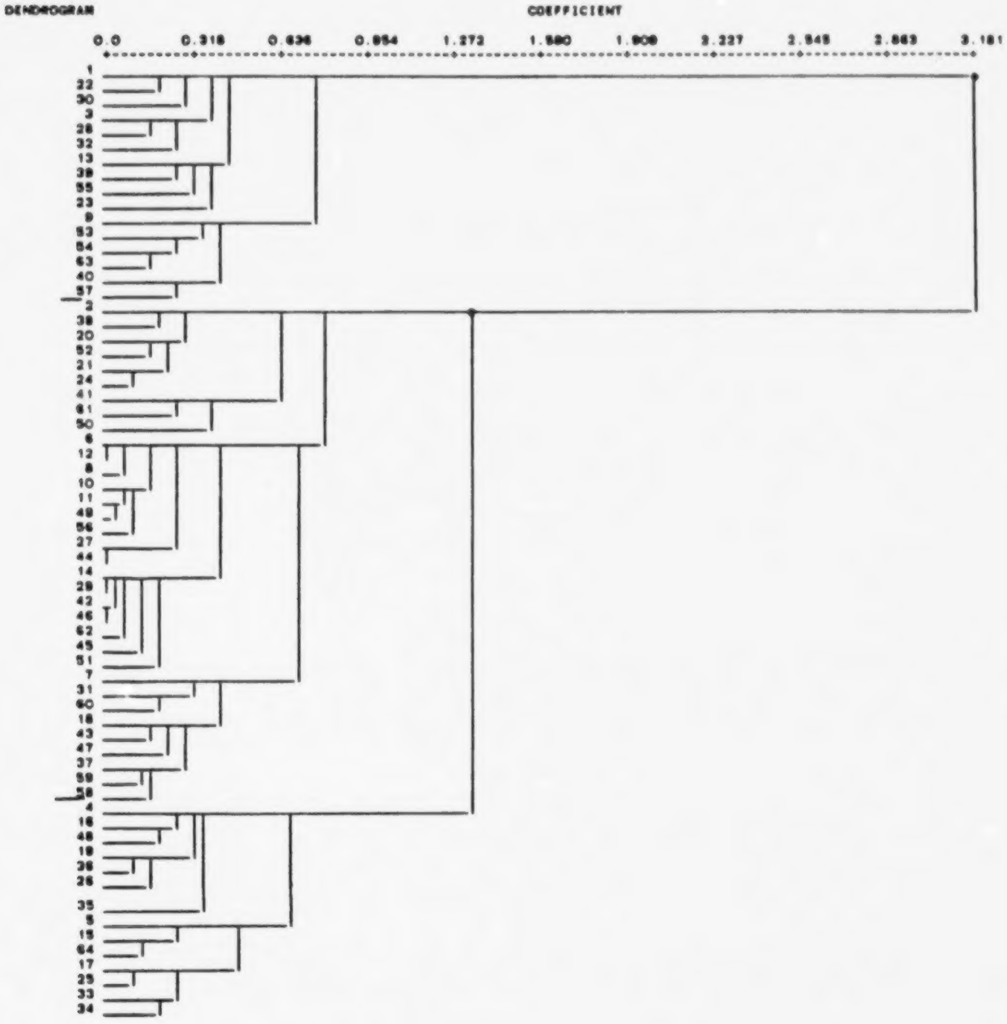


Figure 2: k-STEM CLUSTERS (REAL WORDS) FOR ADULT SUBJECT GROUP I (n = 16)

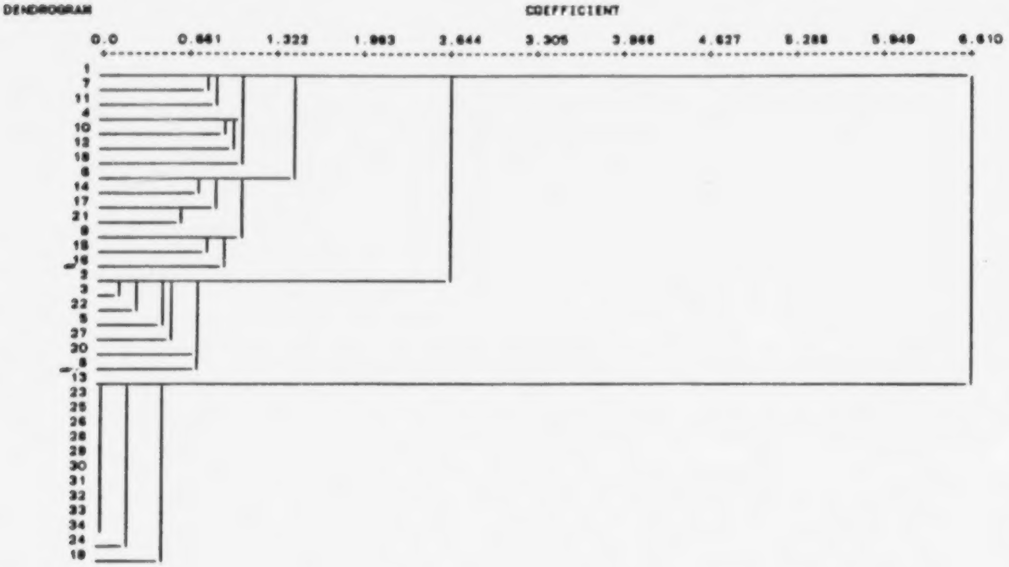


Figure 3: k-STEM CLUSTERS (REAL WORDS) FOR ADULT SUBJECT GROUP II (n = 34)

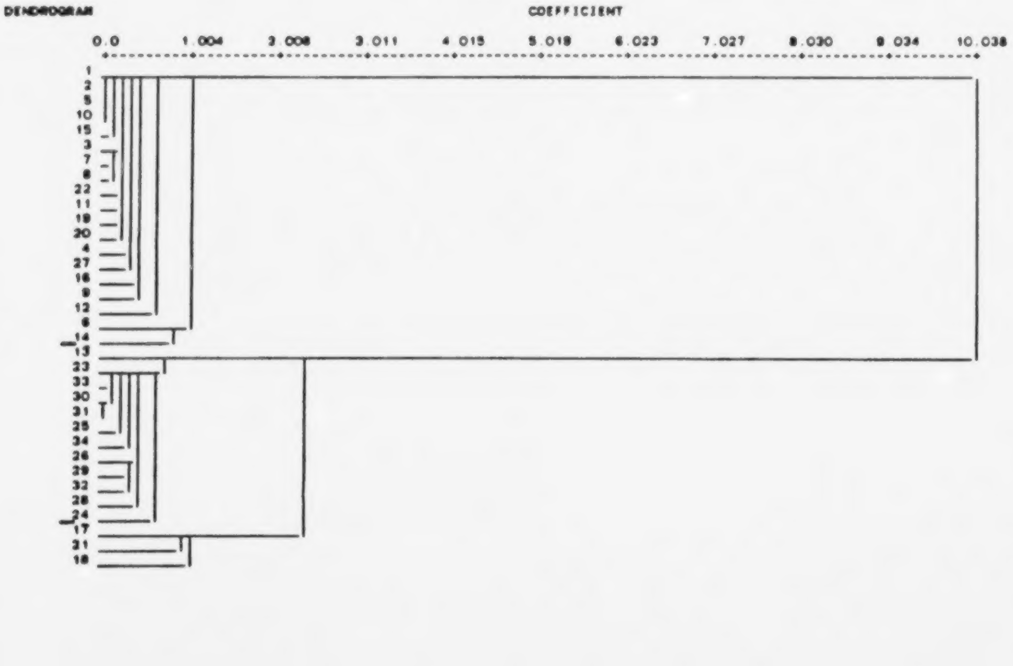


Figure 4: k-STEM CLUSTERS (REAL WORDS) FOR ADULT SUBJECT GROUP III (n = 14)

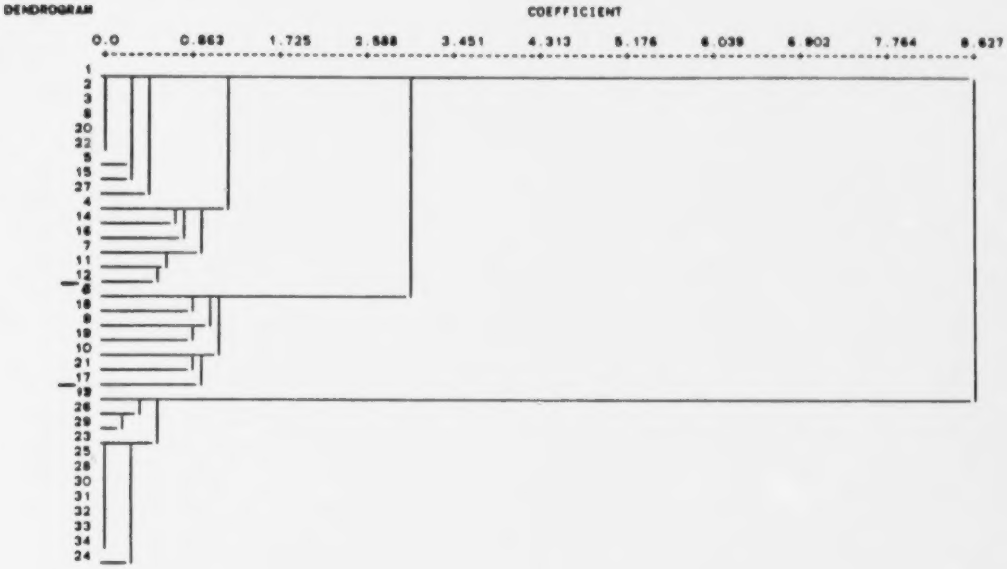


Figure 5: ADULT SUBJECT GROUPS FOR k-STEM NON-WORDS

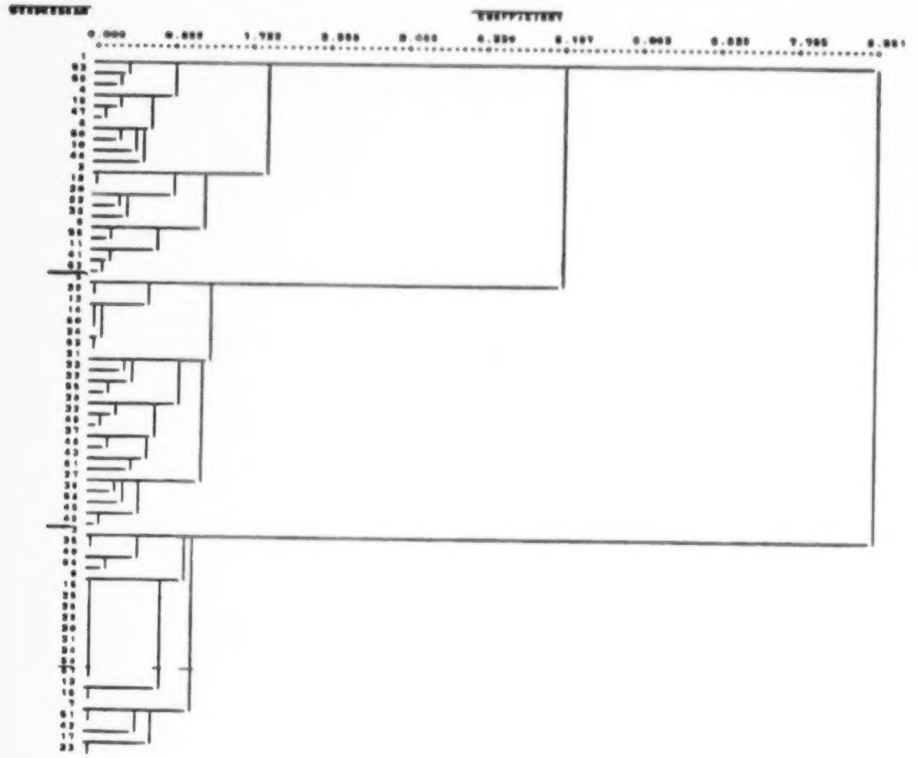


Figure 6: NON-ADULT SUBJECT GROUPS FOR k-STEM REAL WORDS AND NON-WORDS

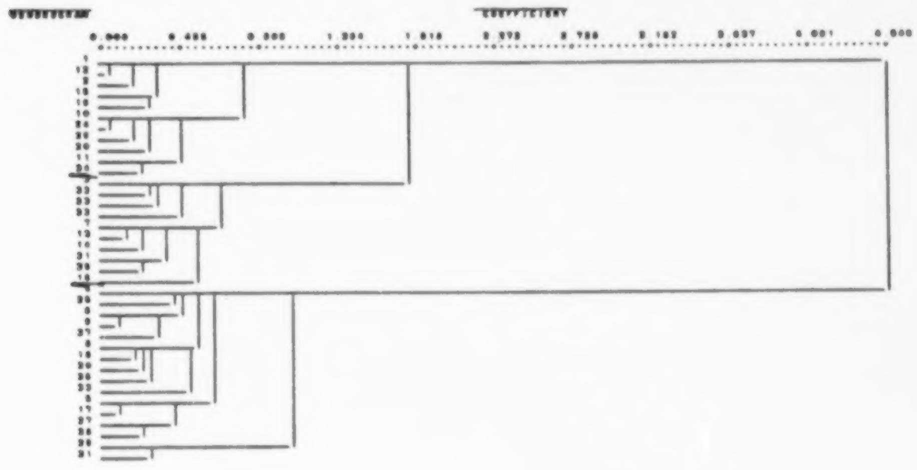


Figure 7: k-STEM CLUSTERS (REAL AND NON-WORDS)
FOR NON-ADULT SUBJECT GROUP 1 (n = 11)

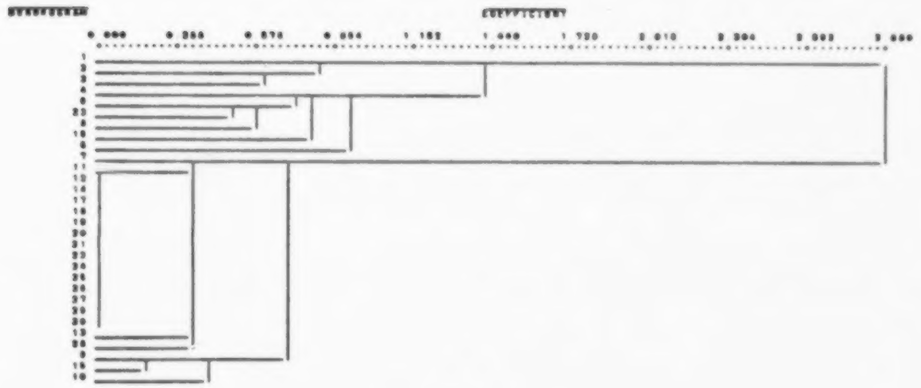


Figure 8: k-STEM CLUSTERS (REAL AND NON-WORDS)
FOR NON-ADULT SUBJECT GROUP 2 (n = 10)

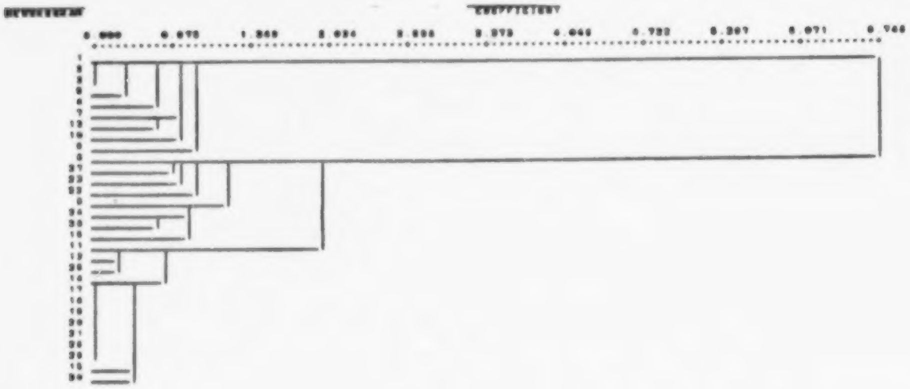
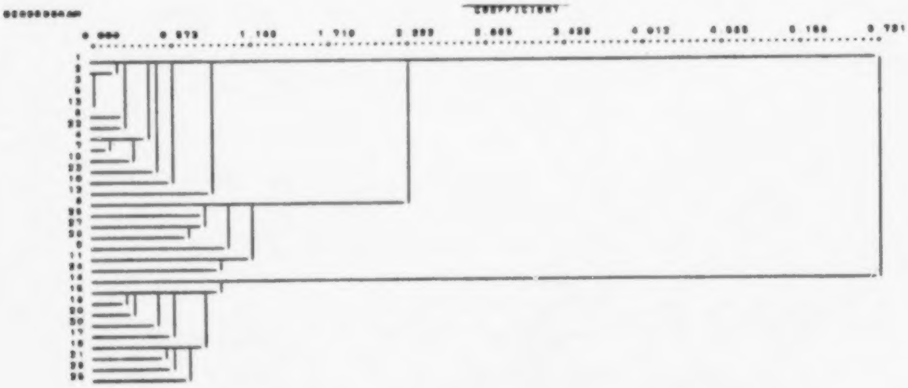


Figure 9: k-STEM CLUSTERS (REAL AND NON-WORDS)
FOR NON-ADULT SUBJECT GROUP 3 (n = 16)



APPENDIX E: ADULT SUBJECT GROUPS FOR THE "DENTAL PALATALIZATION" PATTERN

Table E.1: ADULT **SUBJECT GROUP I** (d-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 24)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**50%**	12			50%	32		
Males	**50%**	12			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**62.5%**	15	(6)	(9)	53%	34	(17)	(17)
NS	**37.5%**	9	(6)	(3)	47%	30	(15)	(15)
AGE								
20 - 29	**12.5%**	3	(2)	(1)	28.125%	18	(9)	(9)
30 - 39	**4.2%**	1	(0)	(1)	18.75%	12	(6)	(6)
40 - 49	**29.2%**	7	(3)	(4)	15.625%	10	(5)	(5)
50 - 59	**12.5%**	3	(1)	(2)	12.5%	8	(4)	(4)
60 - 69	**16.6%**	4	(3)	(1)	12.5%	8	(4)	(4)
70 & older	**25%**	6	(3)	(3)	12.5%	8	(4)	(4)
EDUCATION								
higher	**20.8%**	5	(1)	(4)	44%	28	(11)	(17)
secondary	**29.2%**	7	(3)	(4)	25%	16	(5)	(11)
elementary	**50%**	12	(8)	(4)	31%	20	(16)	(4)

Table E.2: DISTRIBUTION OF ADULT **SUBJECT GROUP I** (d-stem real and non-words)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 24)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	-	1	2	-	4	4	5	5
30-39	-	1	-	-	4	4	2	2
(sub-total$_1$)	(0 +	2 = 2)	(2 +	0 = 2)	(8 +	8=16)	(7 +	7 = 14)
%	**8.3%**		**8.3%**		25%		21.87%	
40-49	2	3	1	1	3	3	2	2
50-59	1	1	-	1	2	2	2	2
60-69	1	1	2	-	2	2	2	2
70 +	2	2	1	1	2	2	2	2
(sub-total$_2$)	(6 +	7=13)	(4 +	3 = 7)	(9 +	9=18)	(8 +	8 = 16)
%	**54%**		**29.2%**		28.12%		25%	
(Total)	(6 +	9=15)	(6 +	3 = 9)	(17 +	17=34)	(15 +	15=30)
%	62.5%		37.4%		53%		47%	

Table E.3: ADULT **SUBJECT GROUP II** (d-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 31)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**58%**	18			50%	32		
Males	**42%**	13			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**55%**	17	(10)	(7)	53%	34	(17)	(17)
NS	**45%**	14	(8)	(6)	47%	30	(15)	(15)
AGE								
20 - 29	**35.5%**	11	(6)	(5)	28.125%	18	(9)	(9)
30 - 39	**25.8%**	8	(5)	(3)	18.75%	12	(6)	(6)
40 - 49	**9.7%**	3	(2)	(1)	15.625%	10	(5)	(5)
50 - 59	**12.9%**	4	(3)	(1)	12.5%	8	(4)	(4)
60 - 69	**12.9%**	4	(1)	(3)	12.5%	8	(4)	(4)
70 & older	**3.2%**	1	(1)	(0)	12.5%	8	(4)	(4)
EDUCATION								
higher	**55%**	17	(9)	(8)	44%	28	(11)	(17)
secondary	**22.5%**	7	(2)	(5)	25%	16	(5)	(11)
elementary	**22.5%**	7	(7)	(0)	31%	20	(16)	(4)

Table E.4: DISTRIBUTION OF ADULT **SUBJECT GROUP II** (d-stem real and non-words) BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 31)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	3	2	3	3	4	4	5	5
30-39	4	3	1	-	4	4	2	2
(sub-total1)	(7 +	5=12)	(4 +	3 = 7)	(8 +	8=16)	(7 +	7 = 14)
%	**38.7%**		**22.5%**		25%		21.87%	
40-49	1	-	1	1	3	3	2	2
50-59	1	1	2	-	2	2	2	2
60-69	1	1	-	2	2	2	2	2
70 +	-	-	1	-	2	2	2	2
(sub-total2)	(3 +	2 = 5)	(4 +	3 = 7)	(9 +	9=18)	(8 +	8 = 16)
%	**16.1%**		**22.5%**		28.12%		25%	
(Total)	(10 +	7=17)	(8 +	6=14)	(17 +	17=34)	(15 +	15=30)
%	55%		45%		53%		47%	

Table E.5: ADULT **SUBJECT GROUP III** (d-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP III (n = 9)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**22.2%**	2			50%	32		
Males	**77.7%**	7			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**22.2%**	2	(1)	(1)	53%	34	(17)	(17)
NS	**77.7%**	7	(1)	(6)	47%	30	(15)	(15)
AGE								
20 - 29	**44.4%**	4	(1)	(3)	28.125%	18	(9)	(9)
30 - 39	**33.3%**	3	(1)	(2)	18.75%	12	(6)	(6)
40 - 49	-	0	(0)	(0)	15.625%	10	(5)	(5)
50 - 59	**11.1%**	1	(0)	(1)	12.5%	8	(4)	(4)
60 - 69	-	0	(0)	(0)	12.5%	8	(4)	(4)
70 & older	**11.1%**	1	(0)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**77.7%**	7	(1)	(6)	44%	28	(11)	(17)
secondary	**11.1%**	1	(0)	(1)	25%	16	(5)	(11)
elementary	**11.1%**	1	(1)	(0)	31%	20	(16)	(4)

Table E.6: DISTRIBUTION OF ADULT **SUBJECT GROUP III** (d-stem real and non-words) BY GENDER, RESIDENCE, AGE, AND EDUCATION

(n = 9)

	Females (n = 2)						Males (n = 7)					
	RK (n = 1)			NS (n = 1)			RK (n = 1)			NS (n = 6)		
Age	el.	sec.	high	el.	sec.	high	el.	sec.	high	el.	sec.	high
20-29	-	-	1	-	-	-	-	-	1	-	-	2
30-39	-	-	-	1	-	-	-	-	-	-	1	1
40-49	-	-	-	-	-	-	-	-	-	-	-	-
50-59	-	-	-	-	-	-	-	-	-	-	-	1
60-69	-	-	-	-	-	-	-	-	-	-	-	-
70 +	-	-	-	-	-	-	-	-	-	-	-	1
Total	0	0	1	1	0	0	0	0	1	0	1	5
% (n=9)	0	0	11.1	11.1	0	0	0	0	11.1	0	11.1	55.5

Table E.7: ADULT **SUBJECT GROUP I** (t-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 24)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**54%**	13			50%	32		
Males	**46%**	11			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**58.3%**	14	(7)	(7)	53%	34	(17)	(17)
NS	**41.6%**	10	(6)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**16.66%**	4	(2)	(2)	28.125%	18	(9)	(9)
30 - 39	**16.66%**	4	(2)	(2)	18.75%	12	(6)	(6)
40 - 49	**20.83%**	5	(3)	(2)	15.625%	10	(5)	(5)
50 - 59	**16.66%**	4	(2)	(2)	12.5%	8	(4)	(4)
60 - 69	**12.5%**	3	(2)	(1)	12.5%	8	(4)	(4)
70 & older	**16.66%**	4	(2)	(2)	12.5%	8	(4)	(4)
EDUCATION								
higher	**41.6%**	10	(5)	(5)	44%	28	(11)	(17)
secondary	**25%**	6	(1)	(5)	25%	16	(5)	(11)
elementary	**33.3%**	8	(7)	(1)	31%	20	(16)	(4)

Table E.8: DISTRIBUTION OF ADULT **SUBJECT GROUP I** (t-stem real and non-words)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 24)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	1	1	1	1	4	4	5	5
30-39	1	2	1	-	4	4	2	2
40-49	3	1	-	1	3	3	2	2
(sub-total1)	(5 + 4 = 9)		(2 + 2 = 4)		(11 + 11=22)		(9 + 9 = 18)	
%	**37.5%**		**16.66%**		34.4%		28.1%	
50-59	-	1	2	1	2	2	2	2
60-69	1	-	1	1	2	2	2	2
70 +	1	2	1	-	2	2	2	2
(sub-total2)	(2 + 3 = 5)		(4 + 2 = 6)		(6 + 6=12)		(6 + 6 = 12)	
%	**20.83%**		**25%**		18.75%		18.75%	
(Total)	(7 + 7=14)		(6 + 4=10)		(17 + 17=34)		(15 + 15=30)	
%	58.3%		41.6%		53%		47%	

Table E.9: ADULT **SUBJECT GROUP II** (t-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP II	**(n = 21)**			ADULT SAMPLE	(n = 64)		
	%	n			%	n		
GENDER								
Females	**48%**	10			50%	32		
Males	**52%**	11			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**57%**	12	(5)	(7)	53%	34	(17)	(17)
NS	**43%**	9	(5)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**28.57%**	6	(3)	(3)	28.125%	18	(9)	(9)
30 - 39	**19%**	4	(2)	(2)	18.75%	12	(6)	(6)
40 - 49	**14.28%**	3	(1)	(2)	15.625%	10	(5)	(5)
50 - 59	**9.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**19%**	4	(2)	(2)	12.5%	8	(4)	(4)
70 & older	**9.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**38%**	8	(2)	(6)	44%	28	(11)	(17)
secondary	**33.3%**	7	(4)	(3)	25%	16	(5)	(11)
elementary	**28.57%**	6	(4)	(2)	31%	20	(16)	(4)

Table E.10: ADULT **SUBJECT GROUP III** (t-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP III			(n = 19)	ADULT SAMPLE			(n = 64)
	%	n			%	n		
GENDER								
Females	**47.36%**	9			50%	32		
Males	**52.63%**	10			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**42%**	8	(5)	(3)	53%	34	(17)	(17)
NS	**58%**	11	(4)	(7)	47%	30	(15)	(15)
AGE								
20 - 29	**42%**	8	(4)	(4)	28.125%	18	(9)	(9)
30 - 39	**21%**	4	(2)	(2)	18.75%	12	(6)	(6)
40 - 49	**10.5%**	2	(1)	(1)	15.625%	10	(5)	(5)
50 - 59	**10.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**5.26%**	1	(0)	(1)	12.5%	8	(4)	(4)
70 & older	**10.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**52.63%**	10	(4)	(6)	44%	28	(11)	(17)
secondary	**15.78%**	3	(0)	(3)	25%	16	(5)	(11)
elementary	**31.57%**	6	(5)	(1)	31%	20	(16)	(4)

Table E.11: DISTRIBUTION OF ADULT **SUBJECT GROUP III** (t-stem real and non-words)
BY RESIDENCE, GENDER, AND AGE vs. ADULT SAMPLE

	SUBJECT GROUP III (n = 19)				ADULT SAMPLE (n = 64)			
	Ruski Kerestur		Novi Sad		Ruski Kerestur		Novi Sad	
Age	Fem	Male	Fem	Male	Fem	Male	Fem	Male
20-29	2	1	2	3	4	4	5	5
30-39	1	-	1	2	4	4	2	2
(sub-total1)	(3 +	1 = 4)	(3 +	5 = 8)	(8 +	8=16)	(7 +	7 = 14)
%	**21%**		**42%**		25%		21.87%	
40-49	-	1	1	-	3	3	2	2
50-59	1	-	-	1	2	2	2	2
60-69	-	1	-	-	2	2	2	2
70 +	1	-	-	1	2	2	2	2
(sub-total2)	(2 +	2 = 4)	(1 +	2 = 3)	(9 +	9=18)	(8 +	8 = 16)
%	**21%**		**15.78%**		28.12%		25%	
(Total)	(5 +	3 = 8)	(4 +	7=11)	(17 +	17=34)	(15 +	15=30)
%	42%		58%		53%		47%	

Table E.12: ADULT **SUBJECT GROUP II*** (z-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 12)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**41.6%**	5			50%	32		
Males	**58.3%**	7			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**33.3%**	4	(2)	(2)	53%	34	(17)	(17)
NS	**66.6%**	8	(3)	(5)	47%	30	(15)	(15)
AGE								
20 - 29	**41.6%**	5	(2)	(3)	28.125%	18	(9)	(9)
30 - 39	**33.3%**	4	(2)	(2)	18.75%	12	(6)	(6)
40 - 49	**0**	0	-	-	15.625%	10	(5)	(5)
50 - 59	**16.6%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**0**	0	-	-	12.5%	8	(4)	(4)
70 & older	**8.3%**	1	-	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**66.6%**	8	(3)	(5)	44%	28	(11)	(17)
secondary	**16.6%**	2	(1)	(1)	25%	16	(5)	(11)
elementary	**16.6%**	2	(1)	(1)	31%	20	(16)	(4)

* Subject Group I consists of all other speakers in the adult sample.

Table E.13: ADULT **SUBJECT GROUP I** (s-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 10)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**30%**	3			50%	32		
Males	**70%**	7			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**60%**	6	(2)	(4)	53%	34	(17)	(17)
NS	**40%**	4	(1)	(3)	47%	30	(15)	(15)
AGE								
20 - 29	**30%**	3	-	(3)	28.125%	18	(9)	(9)
30 - 39	**20%**	2	(1)	(1)	18.75%	12	(6)	(6)
40 - 49	**20%**	2	(1)	(1)	15.625%	10	(5)	(5)
50 - 59	**0**	0	-	-	12.5%	8	(4)	(4)
60 - 69	**10%**	1	-	(1)	12.5%	8	(4)	(4)
70 & older	**20%**	2	(1)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**30%**	3	-	(3)	44%	28	(11)	(17)
secondary	**40%**	4	-	(4)	25%	16	(5)	(11)
elementary	**30%**	3	(3)	-	31%	20	(16)	(4)

Table E.14: ADULT **SUBJECT GROUP II** (s-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 44)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**52.27%**	23			50%	32		
Males	**47.72%**	21			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**59%**	26	(14)	(12)	53%	34	(17)	(17)
NS	**41%**	18	(9)	(9)	47%	30	(15)	(15)
AGE								
20 - 29	**22.72%**	10	(6)	(4)	28.125%	18	(9)	(9)
30 - 39	**18.18%**	8	(4)	(4)	18.75%	12	(6)	(6)
40 - 49	**15.9%**	7	(3)	(4)	15.625%	10	(5)	(5)
50 - 59	**15.9%**	7	(3)	(4)	12.5%	8	(4)	(4)
60 - 69	**15.9%**	7	(4)	(3)	12.5%	8	(4)	(4)
70 & older	**11.3%**	5	(3)	(2)	12.5%	8	(4)	(4)
EDUCATION								
higher	**43.18%**	19	(7)	(12)	44%	28	(11)	(17)
secondary	**22.72%**	10	(5)	(5)	25%	16	(5)	(11)
elementary	**34.09%**	15	(11)	(4)	31%	20	(16)	(4)

Table E.15: ADULT **SUBJECT GROUP III** (s-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP III (n = 10)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**60%**	6			50%	32		
Males	**40%**	4			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**20%**	2	(1)	(1)	53%	34	(17)	(17)
NS	**80%**	8	(5)	(3)	47%	30	(15)	(15)
AGE								
20 - 29	**50%**	5	(3)	(2)	28.125%	18	(9)	(9)
30 - 39	**20%**	2	(1)	(1)	18.75%	12	(6)	(6)
40 - 49	**10%**	1	(1)	-	15.625%	10	(5)	(5)
50 - 59	**10%**	1	(1)	-	12.5%	8	(4)	(4)
60 - 69	**0**	0	-	-	12.5%	8	(4)	(4)
70 & older	**10%**	1	-	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**60%**	6	(4)	(2)	44%	28	(11)	(17)
secondary	**20%**	2	-	(2)	25%	16	(5)	(11)
elementary	**20%**	2	(2)	-	31%	20	(16)	(4)

Table E.16: ADULT **SUBJECT GROUP I** (I-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 17)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**58.82%**	10			50%	32		
Males	**41.17%**	7			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**58.82%**	10	(7)	(3)	53%	34	(17)	(17)
NS	**41.17%**	7	(3)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**29.4%**	5	(2)	(3)	28.125%	18	(9)	(9)
30 - 39	**5.88%**	1	(1)	-	18.75%	12	(6)	(6)
40 - 49	**35.29%**	6	(4)	(2)	15.625%	10	(5)	(5)
50 - 59	**11.76%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**5.88%**	1	(1)	-	12.5%	8	(4)	(4)
70 & older	**11.76%**	2	(1)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**29.4%**	5	(1)	(4)	44%	28	(11)	(17)
secondary	**29.4%**	5	(2)	(3)	25%	16	(5)	(11)
elementary	**41.17%**	7	(7)	-	31%	20	(16)	(4)

Table E.17: ADULT **SUBJECT GROUP II** (I-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 31)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**48.38%**	15			50%	32		
Males	**51.61%**	16			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**58%**	18	(6)	(12)	53%	34	(17)	(17)
NS	**42%**	13	(9)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**16.12%**	5	(4)	(1)	28.125%	18	(9)	(9)
30 - 39	**19.35%**	6	(2)	(4)	18.75%	12	(6)	(6)
40 - 49	**12.9%**	4	(1)	(3)	15.625%	10	(5)	(5)
50 - 59	**16.12%**	5	(3)	(2)	12.5%	8	(4)	(4)
60 - 69	**19.35%**	6	(2)	(4)	12.5%	8	(4)	(4)
70 & older	**16.12%**	5	(3)	(2)	12.5%	8	(4)	(4)
EDUCATION								
higher	**32.25%**	10	(5)	(5)	44%	28	(11)	(17)
secondary	**29%**	9	(2)	(7)	25%	16	(5)	(11)
elementary	**38.7%**	12	(8)	(4)	31%	20	(16)	(4)

Table E.18: ADULT **SUBJECT GROUP III** (I-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP III			**(n = 16)**	ADULT SAMPLE		(n = 64)	
	%	n			%	n		
GENDER								
Females	**43.75%**	7			50%	32		
Males	**56.25%**	9			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**37.5%**	6	(4)	(2)	53%	34	(17)	(17)
NS	**62.5%**	10	(3)	(7)	47%	30	(15)	(15)
AGE								
20 - 29	**50%**	8	(3)	(5)	28.125%	18	(9)	(9)
30 - 39	**31.25%**	5	(3)	(2)	18.75%	12	(6)	(6)
40 - 49	**0**	0	-	-	15.625%	10	(5)	(5)
50 - 59	**6.25%**	1	-	(1)	12.5%	8	(4)	(4)
60 - 69	**6.25%**	1	(1)	-	12.5%	8	(4)	(4)
70 & older	**6.25%**	1	-	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**81.25%**	13	(5)	(8)	44%	28	(11)	(17)
secondary	**6.25%**	1	-	(1)	25%	16	(5)	(11)
elementary	**12.5%**	2	(2)	-	31%	20	(16)	(4)

Table E.19: ADULT **SUBJECT GROUP I** (n-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP I (n = 16)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**50%**	8			50%	32		
Males	**50%**	8			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**62.5%**	10	(6)	(4)	53%	34	(17)	(17)
NS	**37.5%**	6	(2)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**18.75%**	3	(1)	(2)	28.125%	18	(9)	(9)
30 - 39	**18.75%**	3	(2)	(1)	18.75%	12	(6)	(6)
40 - 49	**25%**	4	(2)	(2)	15.625%	10	(5)	(5)
50 - 59	**12.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
60 - 69	**12.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
70 & older	**12.5%**	2	(1)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**31.25%**	5	(1)	(4)	44%	28	(11)	(17)
secondary	**31.25%**	5	(1)	(4)	25%	16	(5)	(11)
elementary	**37.5%**	6	(6)	-	31%	20	(16)	(4)

Table E.20: ADULT **SUBJECT GROUP II** (n-STEM REAL and NON-WORDS) vs. ADULT SAMPLE

	SUBJECT GROUP II (n = 31)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**58%**	18			50%	32		
Males	**42%**	13			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**54.83%**	17	(8)	(9)	53%	34	(17)	(17)
NS	**45.16%**	14	(10)	(4)	47%	30	(15)	(15)
AGE								
20 - 29	**29%**	9	(5)	(4)	28.125%	18	(9)	(9)
30 - 39	**9.67%**	3	(2)	(1)	18.75%	12	(6)	(6)
40 - 49	**12.9%**	4	(3)	(1)	15.625%	10	(5)	(5)
50 - 59	**16.12%**	5	(3)	(2)	12.5%	8	(4)	(4)
60 - 69	**19.35%**	6	(3)	(3)	12.5%	8	(4)	(4)
70 & older	**12.9%**	4	(2)	(2)	12.5%	8	(4)	(4)
EDUCATION								
higher	**41.93%**	13	(7)	(6)	44%	28	(11)	(17)
secondary	**29%**	9	(4)	(5)	25%	16	(5)	(11)
elementary	**29%**	9	(7)	(2)	31%	20	(16)	(4)

Table E.21: ADULT **SUBJECT GROUP III** (n-STEM REAL and NON-WORDS)
vs. ADULT SAMPLE

	SUBJECT GROUP III (n = 17)				ADULT SAMPLE (n = 64)			
	%	n			%	n		
GENDER								
Females	**35.29%**	6			50%	32		
Males	**64.7%**	11			50%	32		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**41.17%**	7	(3)	(4)	53%	34	(17)	(17)
NS	**58.82%**	10	(3)	(7)	47%	30	(15)	(15)
AGE								
20 - 29	**35.29%**	6	(3)	(3)	28.125%	18	(9)	(9)
30 - 39	**35.29%**	6	(2)	(4)	18.75%	12	(6)	(6)
40 - 49	**11.76%**	2	-	(2)	15.625%	10	(5)	(5)
50 - 59	**5.88%**	1	-	(1)	12.5%	8	(4)	(4)
60 - 69	**0**	0	-	-	12.5%	8	(4)	(4)
70 & older	**11.76%**	2	(1)	(1)	12.5%	8	(4)	(4)
EDUCATION								
higher	**58.82%**	10	(3)	(7)	44%	28	(11)	(17)
secondary	**11.76%**	2	-	(2)	25%	16	(5)	(11)
elementary	**29.41%**	5	(3)	(2)	31%	20	(16)	(4)

APPENDIX F: NON-ADULT SUBJECT GROUPS FOR THE "DENTAL PALATALIZATION" PATTERN

Table F.1: NON-ADULT **SUBJECT GROUP 1** (d-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 1 (n = 13)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**38.46%**	5			51.35%	19		
Males	**61.53%**	8			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**61.53%**	8	(2)	(6)	48.64%	18	(9)	(9)
NS	**38.46%**	5	(3)	(2)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**30.76%**	4	(1)	(3)	32.43%	12	(6)	(6)
5 - 8	**53.84%**	7	(2)	(5)	35.13%	13	(7)	(6)
9 - 12	**15.38%**	2	(2)	(0)	32.43%	12	(6)	(6)

Table F.2: NON-ADULT **SUBJECT GROUP 2** (d-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2		**(n = 11)**		NON-ADULT SAMPLE		(n = 37)	
	%	n			%	n		
GENDER								
Females	**81.8%**	9			51.35%	19		
Males	**18.2%**	2			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**27.3%**	3	(3)	(0)	48.64%	18	(9)	(9)
NS	**72.7%**	8	(6)	(2)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**63.6%**	7	(5)	(2)	32.43%	12	(6)	(6)
5 - 8	**9.1%**	1	(1)	(0)	35.13%	13	(7)	(6)
9 - 12	**27.3%**	3	(3)	(0)	32.43%	12	(6)	(6)

Table F.3: NON-ADULT **SUBJECT GROUP 3** (d-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 3		(n = 13)		NON-ADULT SAMPLE		(n = 37)	
	%	n			%	n		
GENDER								
Females	**38.46%**	5			51.35%	19		
Males	**61.53%**	8			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**53.84%**	7	(4)	(3)	48.64%	18	(9)	(9)
NS	**46.15%**	6	(1)	(5)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**7.69%**	1	(0)	(1)	32.43%	12	(6)	(6)
5 - 8	**38.46%**	5	(4)	(1)	35.13%	13	(7)	(6)
9 - 12	**53.84%**	7	(1)	(6)	32.43%	12	(6)	(6)

Table F.4: NON-ADULT **SUBJECT GROUP 1** (ι-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 1 (n = 7)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**42.85%**	3			51.35%	19		
Males	**57.14%**	4			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**42.85%**	3	(1)	(2)	48.64%	18	(9)	(9)
NS	**57.14%**	4	(2)	(2)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**71.42%**	5	(2)	(3)	32.43%	12	(6)	(6)
5 - 8	**28.57%**	2	(1)	(1)	35.13%	13	(7)	(6)
9 - 12	**0**	0	(0)	(0)	32.43%	12	(6)	(6)

Table F.5: NON-ADULT **SUBJECT GROUP 2** (i-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2 (n = 15)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**66.6%**	10			51.35%	19		
Males	**33.3%**	5			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**46.6%**	7	(3)	(4)	48.64%	18	(9)	(9)
NS	**53.3%**	8	(7)	(1)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**33.3%**	5	(4)	(1)	32.43%	12	(6)	(6)
5 - 8	**53.3%**	8	(4)	(4)	35.13%	13	(7)	(6)
9 - 12	**13.3%**	2	(2)	(0)	32.43%	12	(6)	(6)

Table F.6: NON-ADULT **SUBJECT GROUP 3** (ι-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 3	**(n = 15)**			NON-ADULT SAMPLE	(n = 37)		
	%	n			%	n		
GENDER								
Females	**40%**	6			51.35%	19		
Males	**60%**	9			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**53.3%**	8	(5)	(3)	48.64%	18	(9)	(9)
NS	**46.6%**	7	(1)	(6)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**13.3%**	2	(0)	(2)	32.43%	12	(6)	(6)
5 - 8	**20%**	3	(2)	(1)	35.13%	13	(7)	(6)
9 - 12	**66.6%**	10	(4)	(6)	32.43%	12	(6)	(6)

Table F.7: NON-ADULT **SUBJECT GROUP 2*** (z-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2 (n = 10)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**50%**	5			51.35%	19		
Males	**50%**	5			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**50%**	5	(3)	(2)	48.64%	18	(9)	(9)
NS	**50%**	5	(2)	(3)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**20%**	2	(1)	(1)	32.43%	12	(6)	(6)
5 - 8	**20%**	2	(2)	(0)	35.13%	13	(7)	(6)
9 - 12	**60%**	6	(2)	(4)	32.43%	12	(6)	(6)

* Subject Group 1 consists of all other speakers in the non-adult sample.

Table F.8: NON-ADULT **SUBJECT GROUP 1** (s-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 1	**(n = 10)**			NON-ADULT SAMPLE	(n = 37)		
	%	n			%	n		
GENDER								
Females	**50%**	5			51.35%	19		
Males	**50%**	5			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**30%**	3	-	(3)	48.64%	18	(9)	(9)
NS	**70%**	7	(5)	(2)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**30%**	3	(1)	(2)	32.43%	12	(6)	(6)
5 - 8	**40%**	4	(2)	(2)	35.13%	13	(7)	(6)
9 - 12	**30%**	3	(2)	(1)	32.43%	12	(6)	(6)

Table F.9: NON-ADULT **SUBJECT GROUP 2** (s-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2 (n = 8)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**25%**	2			51.35%	19		
Males	**75%**	6			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**37.5%**	3	(1)	(2)	48.64%	18	(9)	(9)
NS	**62.5%**	5	(1)	(4)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**62.5%**	5	(2)	(3)	32.43%	12	(6)	(6)
5 - 8	**25%**	2	-	(2)	35.13%	13	(7)	(6)
9 - 12	**12.5%**	1	-	(1)	32.43%	12	(6)	(6)

Table F.10: NON-ADULT **SUBJECT GROUP 3** (s-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 3 **(n = 19)**				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**63.15%**	12			51.35%	19		
Males	**36.84%**	7			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**63.15%**	12	(8)	(4)	48.64%	18	(9)	(9)
NS	**36.84%**	7	(4)	(3)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**21%**	4	(3)	(1)	32.43%	12	(6)	(6)
5 - 8	**36.84%**	7	(5)	(2)	35.13%	13	(7)	(6)
9 - 12	**42.1%**	8	(4)	(4)	32.43%	12	(6)	(6)

Table F.11: NON-ADULT **SUBJECT GROUP 1** (I-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 1 (n = 14)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**57.14%**	8			51.35%	19		
Males	**42.85%**	6			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**35.71%**	5	(2)	(3)	48.64%	18	(9)	(9)
NS	**64.28%**	9	(6)	(3)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**64.28%**	9	(5)	(4)	32.43%	12	(6)	(6)
5 - 8	**28.57%**	4	(2)	(2)	35.13%	13	(7)	(6)
9 - 12	**7.14%**	1	(1)	-	32.43%	12	(6)	(6)

Table F.12: NON-ADULT **SUBJECT GROUP 2** (I-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2 (n = 8)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**25%**	2			51.35%	19		
Males	**75%**	6			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**37.5%**	3	(1)	(2)	48.64%	18	(9)	(9)
NS	**62.5%**	5	(1)	(4)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**25%**	2	-	(2)	32.43%	12	(6)	(6)
5 - 8	**37.5%**	3	-	(3)	35.13%	13	(7)	(6)
9 - 12	**37.5%**	3	(2)	(1)	32.43%	12	(6)	(6)

Table F.13: NON-ADULT **SUBJECT GROUP 3** (I-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 3			**(n = 15)**	NON-ADULT SAMPLE			(n = 37)
	%	n			%	n		
GENDER								
Females	**60%**	9			51.35%	19		
Males	**40%**	6			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**66.6%**	10	(6)	(4)	48.64%	18	(9)	(9)
NS	**33.3%**	5	(3)	(2)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**6.6%**	1	(1)	-	32.43%	12	(6)	(6)
5 - 8	**40%**	6	(5)	(1)	35.13%	13	(7)	(6)
9 - 12	**53.3%**	8	(3)	(5)	32.43%	12	(6)	(6)

Table F.14: NON-ADULT **SUBJECT GROUP 1** (n-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 1 (n = 11)				NON-ADULT SAMPLE (n = 37)			
	%	n			%	n		
GENDER								
Females	**45.45%**	5			51.35%	19		
Males	**54.54%**	6			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**45.45%**	5	(2)	(3)	48.64%	18	(9)	(9)
NS	**54.54%**	6	(3)	(3)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**63.63%**	7	(4)	(3)	32.43%	12	(6)	(6)
5 - 8	**36.36%**	4	(1)	(3)	35.13%	13	(7)	(6)
9 - 12	0	0	-	-	32.43%	12	(6)	(6)

Table F.15: NON-ADULT **SUBJECT GROUP 2** (n-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 2	(n = 17)			NON-ADULT SAMPLE	(n = 37)		
	%	n			%	n		
GENDER								
Females	**52.94%**	9			51.35%	19		
Males	**47.15%**	8			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**29.41%**	5	(2)	(3)	48.64%	18	(9)	(9)
NS	**70.58%**	12	(7)	(5)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**29.41%**	5	(2)	(3)	32.43%	12	(6)	(6)
5 - 8	**35.29%**	6	(3)	(3)	35.13%	13	(7)	(6)
9 - 12	**35.29%**	6	(4)	(2)	32.43%	12	(6)	(6)

Table F.16: NON-ADULT **SUBJECT GROUP 3** (n-STEM NOUNS) vs. NON-ADULT SAMPLE

	SUBJECT GROUP 3	**(n = 9)**			NON-ADULT SAMPLE	(n = 37)		
	%	n			%	n		
GENDER								
Females	**55.5%**	5			51.35%	19		
Males	**44.4%**	4			48.64%	18		
			(Fem)	(Males)			(Fem)	Males
RESIDENCE								
RK	**88.8%**	8	(5)	(3)	48.64%	18	(9)	(9)
NS	**11.1%**	1	-	(1)	51.35%	19	(10)	(9)
GRADE								
1 - 4	**0**	0	-	-	32.43%	12	(6)	(6)
5 - 8	**33.3%**	3	(3)	-	35.13%	13	(7)	(6)
9 - 12	**66.6%**	6	(2)	(4)	32.43%	12	(6)	(6)